Color Video Camera

Operating Instructions
Software Version 1.00

Before operating the unit, please read this manual thoroughly
and retain it for future reference.

SRG-X40UH
SRG-H40UH

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Overview

Safety Regulations (Supplied)

The important points for safe use of the camera are described.
Be sure to read the Safety Regulations.

Operating Instructions (This document/ Web)

This document describes the names of the camera parts and how to install, connect, and operate the camera.
Some models on this document are not sold depending on the region.

Using This Manual

This manual is designed to be read on a computer display. The content you need to know in order to use the camera is described here. Read this manual before operation.

Jumping to a related page

When you read the instructions on a computer display, click the part displayed the relevant page to jump to the page. Relevant pages can be searched easily.

Software display examples

The software displays described in this manual are explanatory examples. Note that some displays may be different from the ones that actually appear. The menu displays and illustrations of the camera SRG-X40UH are shown in the instructions as examples. Only supported functions are displayed.

Printing the Operating Instructions

When you print this document, note that the displays or illustrations printed on a paper may differ from those that appear on the screen depending on your system.

About the description in this document

Resolution and frame rate are described as follows.

4K	3840×2160/25p	
	3840×2160/29.97p	
HD	1280×720/50p	1920×1080/50i
	1280×720/59.94p	1920×1080/50p
	1920×1080/25p	1920×1080/59.94i
	1920×1080/29.97p	1920×1080/59.94p

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Precautions for Preventing Access to the Camera by an Unintended Third Party

The camera settings may be changed by an unintended third party on the network, depending on the usage environment.
The camera can be fraudulently accessed in a network environment where a device is connected or connectable to the network without the administrator's permission, or where a computer or other network device connected to the network can be used without any permission.
After configuring the camera, immediately change the password you use for upgrading the firmware on the camera, from a Web browser on your computer, and for changing settings. For how to change password, see "Changing the Initial Password" (page 43).

Features

Pan/Tilt/Zoom CMOS video camera equipped with a small built-in pan-tilt head

- The camera unit is equipped with a 1/2.5-type Exmor R CMOS sensor and a 20× optical zoom lens with pan/tilt features integrated into a small built-in pan-tilt head. This versatile camera can be used for various applications.
- The pan-tilt head can pan to the right or left by 170 degrees and tilt upward to 90 degrees and downward to 20 degrees, which allows the camera to remotely shoot wide areas.
- The camera pans and tilts at a speed of between 0.5 and 101 degrees (maximum speed) per second, and it also pans and tilts at a maximum speed of 300 degrees per second in the preset operation.

Zoom performance for capturing distant subjects

For SRG-X40UH/H40UH, in addition to 20× optical zoom, Sony's 2×* Clear Image Zoom function is also used to achieve the equivalent of up to 40x optical telephoto zoom. Moreover, using digital zoom together with this achieves the equivalent of up to 240x telephoto zoom.

Video output

The camera is equipped with HDMI and USB output.
For details, see the table of "Video output format/Frame rate" (page 52).

Preset function

Up to 100 presets can be stored in the VISCA command.

Equipped with RS-422 interface

The camera is equipped with RS-422 interface which is the industry standard VISCA camera protocol in external communication.

Equipped with PoE+ (Power over Ethernet Plus)

The camera supports IEEE802.3at-compatible PoE+ (Power over Ethernet Plus) and a single LAN cable is used for power supply and control.

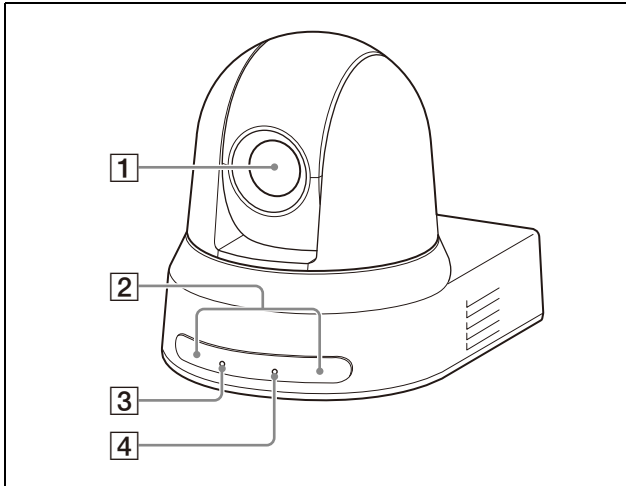## Compatible with VISCA over IP protocol

An IP connection can be established between the camera and the remote controller.

* Only when shooting in less than HD.

Location and Function of Parts

Camera

Front

1 Lens

This is a 20× optical zoom lens. When [CLEAR IMAGE ZOOM] (Clear Image Zoom) is set to [ON] in the ZOOM / FOCUS menu, the camera can zoom up to 30× for 4K and 40× for HD.

Note

Do not touch the part around the lens when energized.

2 Remote commander sensors

These are sensors for the supplied remote commander.

3 POWER lamp

Flashes in green when the camera is connected to an outlet using the supplied AC adapter and power cord, or when power is being supplied by connecting the camera and PoE+ power supply device with a LAN cable. The green lamp stops flashing and lights up when start-up is complete.
The green lamp flashes when the camera receives an operation command from the supplied remote commander. This lamp flashes while the firmware is being updated. The lamp also flashes when there is a problem with the camera.

4 STANDBY lamp

This lamp lights up in orange when the POWER button on the supplied remote commander is pressed and the camera enters the standby mode.

This lamp flashes while the firmware is being updated.
This lamp also flashes when there is a problem with the camera.

Back
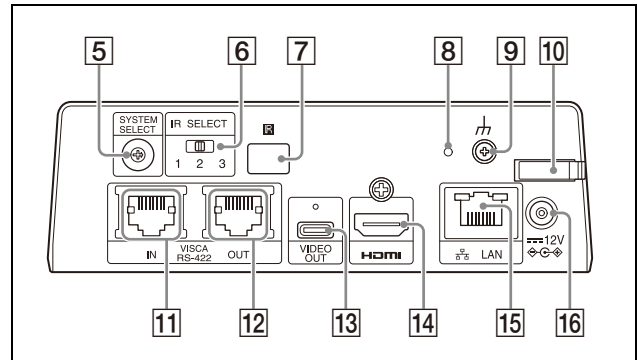
5 SYSTEM SELECT switch

Used to select the video signal format to be output from the HDMI OUT and VIDEO OUT terminals. When the SYSTEM SELECT switch is set to 6, the value set for [VIDEO FORMAT] is applied.
For details, see "SYSTEM SELECT switch settings" (page 52).

6 IR SELECT switch

Select the camera number when you operate multiple cameras with the same remote commander.

7 ⧈ Remote commander sensor

This is for the supplied remote commander.

8 Reset switch

Press the switch for 5 seconds or longer to return to the factory default.

9 ⏚ (earth) terminal

10 AC adapter cord clamper

Fix the cord of an AC adapter with the cord clamper so that it does not come out.

11 VISCA RS-422 IN terminal

Connect with an remote controller (not supplied).
When you connect multiple cameras, connect it to the VISCA RS-422 OUT terminal of the previous camera in the daisy chain connection.

⌤ **VISCA RS-422 OUT terminal**

When you connect multiple cameras, connect it to the VISCA RS-422 IN terminal of the next camera in the daisy chain connection.

⌥ **VIDEO OUT terminal**

Supplies the image as a USB video signal. For details, see the table of "Video output format/Frame rate" (page 52).

⌦ **HDMI OUT terminal**

Supplies the images as an HDMI video signal.
For details, see the table of "Video output format/Frame rate" (page 52).

Note

Under the following cases, VGA output is applied to the image output through the HDMI OUT terminal and the image quality is degraded.
- When the SYSTEM SELECT switch is set to 7
- When you choose [720/59.94p] for [VIDEO FORMAT] on the OSD menu

⌧ 🖧 **LAN (network) terminal (RJ-45)**

Network communication and PoE+ power supply are provided using the network cable (category 5e or higher, shielded twist pair). For more information on the connection, refer to the instruction manual of the PoE+ power supply device.
It lights up in orange when the network is connected by 100BASE-TX.
It is turned off when the network is connected by 10BASE-T or the network is disconnected.
It flashes in green during network communication.
Factory settings for network
IP address: 192.168.0.100
Subnet mask: 255.255.255.0
Default gateway: 192.168.0.254
Name: CAM1
User name: admin
Password: Admin_1234

When connecting this product to a network, connect via a system that provides a protection function, such as a router or firewall. If connected without such protection, security issues may occur.

⌨ ⎓ **12 V ⊙‒⊙ (DC power input) terminal**
Connect the AC adapter (supplied).

Note

Do not use any AC adapter other than the supplied AC adapter. Otherwise, a fire or malfunction may occur.

Bottom
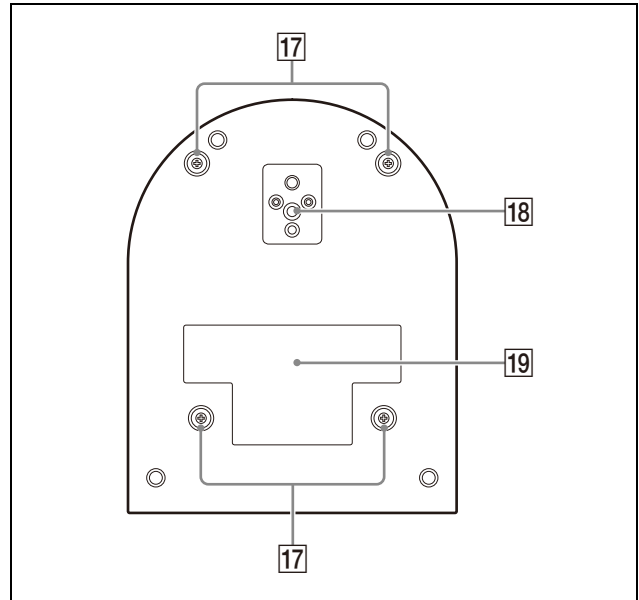
⌫ **Ceiling bracket mounting screw holes**
When installing on the ceiling, use the screw holes to attach the supplied ceiling bracket (A). For details, see "Installing the Camera" (page 14).

⌬ **Tripod socket hole**
Use this to attach the tripod, etc.
For details, see "Attaching the Camera to a Tripod" (page 14).

⌭ **Rating label**
This label shows the name of device and its electric rating.

Important

The product name and electric rating are located at the bottom of the unit.

Infrared Remote Commander (supplied)

① **CAMERA SELECT buttons**

Press the button corresponding to the camera you want to operate with the remote commander. The camera number can be set using the IR SELECT switch on the back of the camera.

Note

If two or more cameras are adjacent and have the same camera number, they are operated simultaneously with the supplied remote commander. When you install the cameras close to each other, set different camera numbers.

For setting of camera number, see "Operating Multiple Cameras Using the Infrared Remote Commander" (page 22).

② **FOCUS buttons**

Used for focus adjustment.
Press the AUTO button to adjust the focus automatically. To adjust the focus manually, press the MANUAL button, and adjust it with the FAR and NEAR buttons.

Note

Press the MANUAL button and adjust the focus manually when shooting the following objects.
- White walls and other objects without contrast

- Objects behind glass
- Objects with horizontal stripes
- Objects on which bright lights are cast or reflected
- Nightscapes and other dark objects with blinking lights
- Lit objects shot with darkened exposure adjustment or exposure compensation settings

③ **DATA SCREEN button**

Press this button to display the main menu PAGE. Press it again to close the menu. If you press the button when a lower-level menu is selected, the display goes back to a higher-level menu.
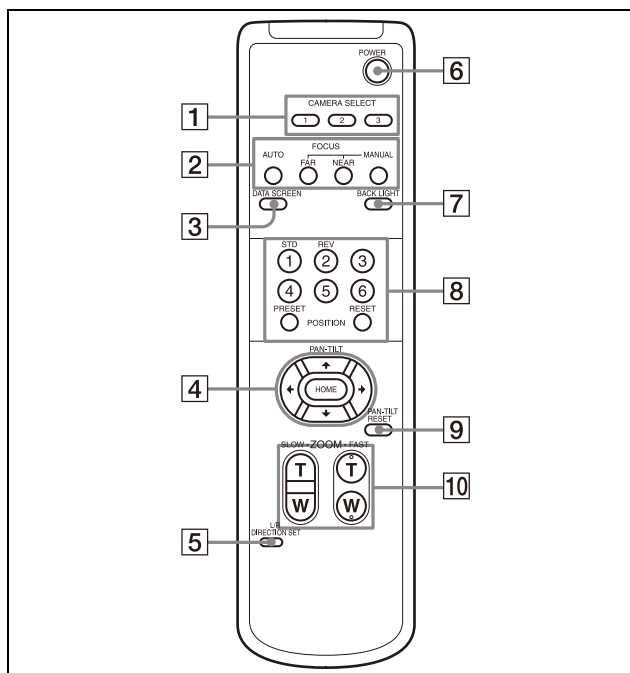
Note

You cannot perform pan/tilt/zoom operations while the menu is displayed.

④ **PAN-TILT button**

Press the arrow buttons to pan or tilt the camera. Press the HOME button to face the camera back to the front.
When the menu is displayed, use ↑ or ↓ to select the menu items and ← or → to change the set values.
The selected setting menu is displayed by pressing the HOME button when the main menu is displayed.

⑤ **L/R DIRECTION SET button**

Hold down this button and press the REV button to change the direction of the camera movement to be opposite the direction of the arrows on the ← and → buttons. To reset the direction of the camera movement, press the STD button while holding down this button.

⑥ **POWER button**

Press this button to turn on power or to put the camera in the standby mode.

⑦ **BACK LIGHT button**

Press this button to enable backlight compensation. Press it again to disable backlight compensation.

Note

The BACK LIGHT button is enabled when MODE (Exposure mode) on the EXPOSURE menu is set to [FULL AUTO] (Full auto), [SHUTTER Pri] (Shutter priority), or [IRIS Pri] (Iris priority).

8 **POSITION buttons**
Hold down the PRESET button and press button 1 to 6 to store the current camera direction, zoom, focus adjustment and backlight compensation in the memory of the pressed number button.
To erase the memory contents, hold down the RESET button and press button 1 to 6.

Notes

- These buttons do not function when the menu is displayed.
- Some memory contents may not be erased even if you use the RESET button.
  For details on items that can be stored by the PRESET button and erased by the RESET button, see "Items Stored in the Preset" (page 47).

9 **PAN-TILT RESET button**
Press this button to reset the pan/tilt position.

10 **ZOOM buttons**
Use the SLOW button to zoom slowly, and the FAST button to zoom quickly.
Press the T (telephoto) side of the button to zoom in, and the W (wide angle) side to zoom out.

Installing batteries in the remote commander

Two R6 (size AA) batteries (commercially available)
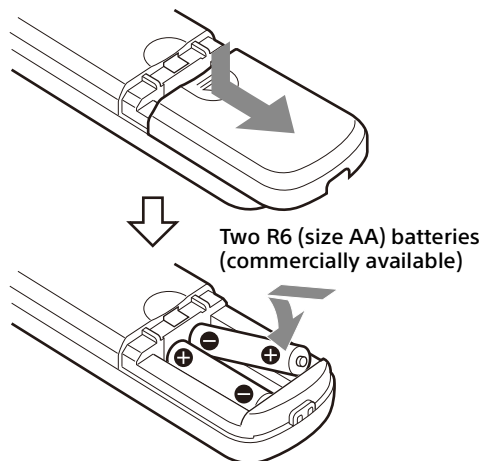
Required batteries

Two R6 (size AA) batteries are required for the remote commander. To avoid the risk of explosion, use R6 (size AA) manganese or alkaline batteries.

Note

Danger of explosion if the batteries are incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. When you dispose of the batteries, you must obey the laws of your area or country.

R6 (size AA) batteries are not supplied.

System Configuration

This camera can be arranged into various system configurations with other products (not supplied). This section describes typical system examples, with the required components and the main usage of each system.

Operating a Single Camera Using the Supplied Remote Commander

What you can do with this system
Operate the camera readily from a short distance.

System Configuration

Video monitor

Remote commander
(supplied)

Video signal

Signal flow
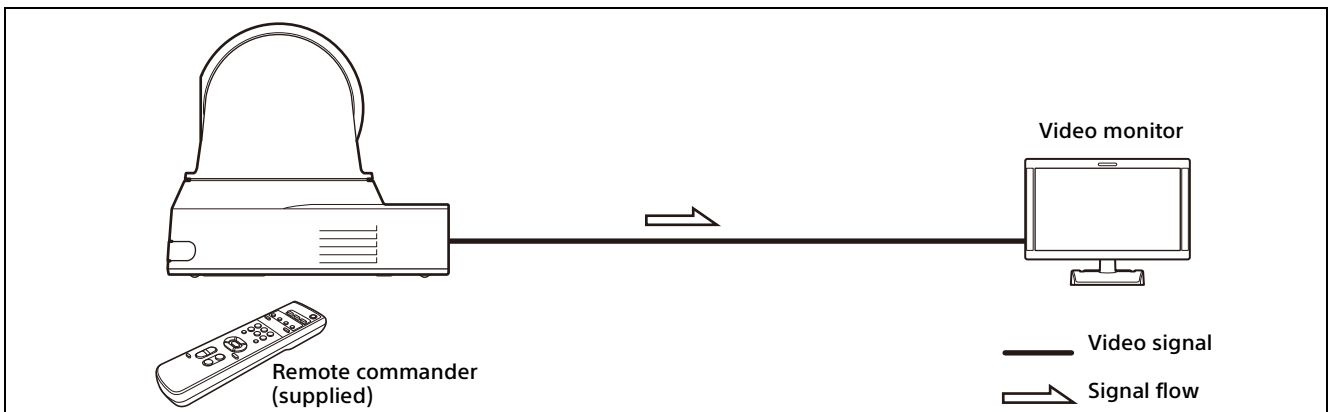
Note

Use an authenticated HDMI cable.

Operating a Single Camera Using a Computer

What you can do with this system

Operate the camera using the USB control application installed on a computer.

System Configuration

Computer

Video signal
Control signal
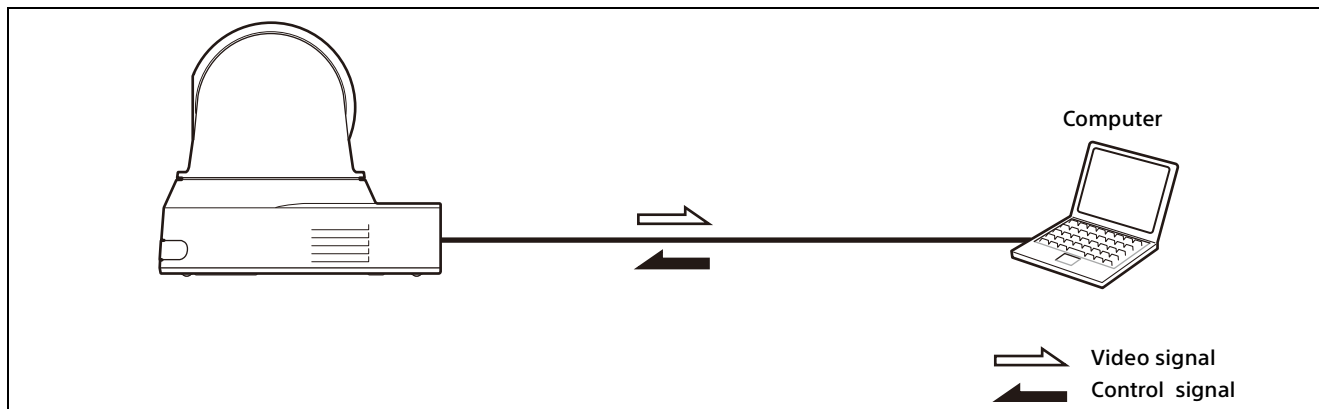
Notes

- When controlling via the USB, set up the USB control in [SYSTEM]-[CONTROL] using the remote controller (page 38).
- Use an authenticated USB cable.

Operating a Single Camera Using the Optional Remote Controller

What you can do with this system

Perform pan/tilt and zoom operations using the joystick of the remote controller.

System Configuration
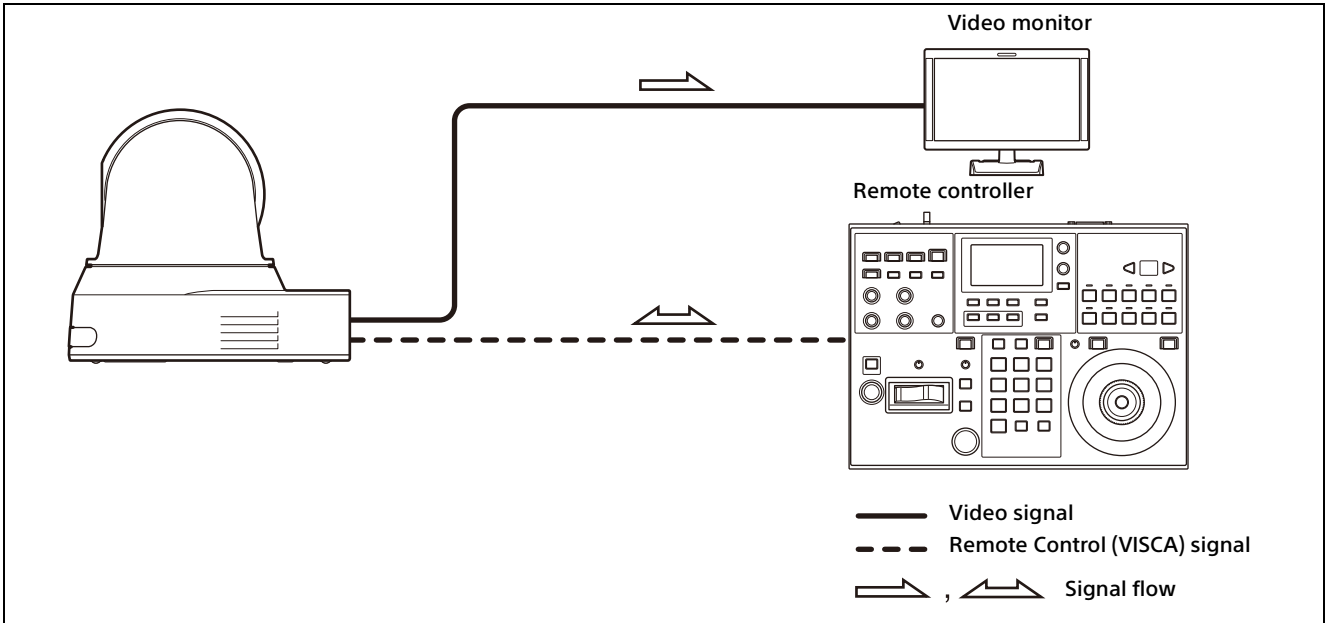
Video monitor

Remote controller

———— Video signal

– – – Remote Control (VISCA) signal

⇨ , ⟋ Signal flow

Note

When controlling via VISCA or VISCA Over IP, set each item in [SYSTEM]-[CONTROL] using the remote controller (page 38).

Operating Multiple Cameras Using the Optional Remote Controller

What you can do with this system

• For the RS-422 connection, you can remotely operate up to seven cameras with a single remote controller.
• Perform pan/tilt and zoom operations using the joystick.

System Configuration

For the RS-422 connection

Video monitor

Video switcher

Remote controller

———— Video signal

‑ ‑ ‑ Remote Control (VISCA) signal

‑ ‑ ‑ Tally/contact signal

, Signal flow

Note

When controlling via VISCA or VISCA Over IP, set each item in [SYSTEM]-[CONTROL] using the remote controller (page 38).

Installing the Camera

Installing the camera on a desk

Place the camera on a flat surface.
If you place the camera on an inclined surface, make sure that the inclination is less than ±15 degrees to guarantee pan/tilt performance, and take measures to prevent it from falling.

Notes

- Do not grasp the camera head when carrying the camera.
- Do not turn the camera head by hand. Doing so may result in a camera malfunction.

Attaching the Camera to a Tripod

Attach a tripod to the screw hole used for attaching a tripod on the bottom of the camera. The tripod must be set up on a flat surface and its screws tightened firmly by hand.
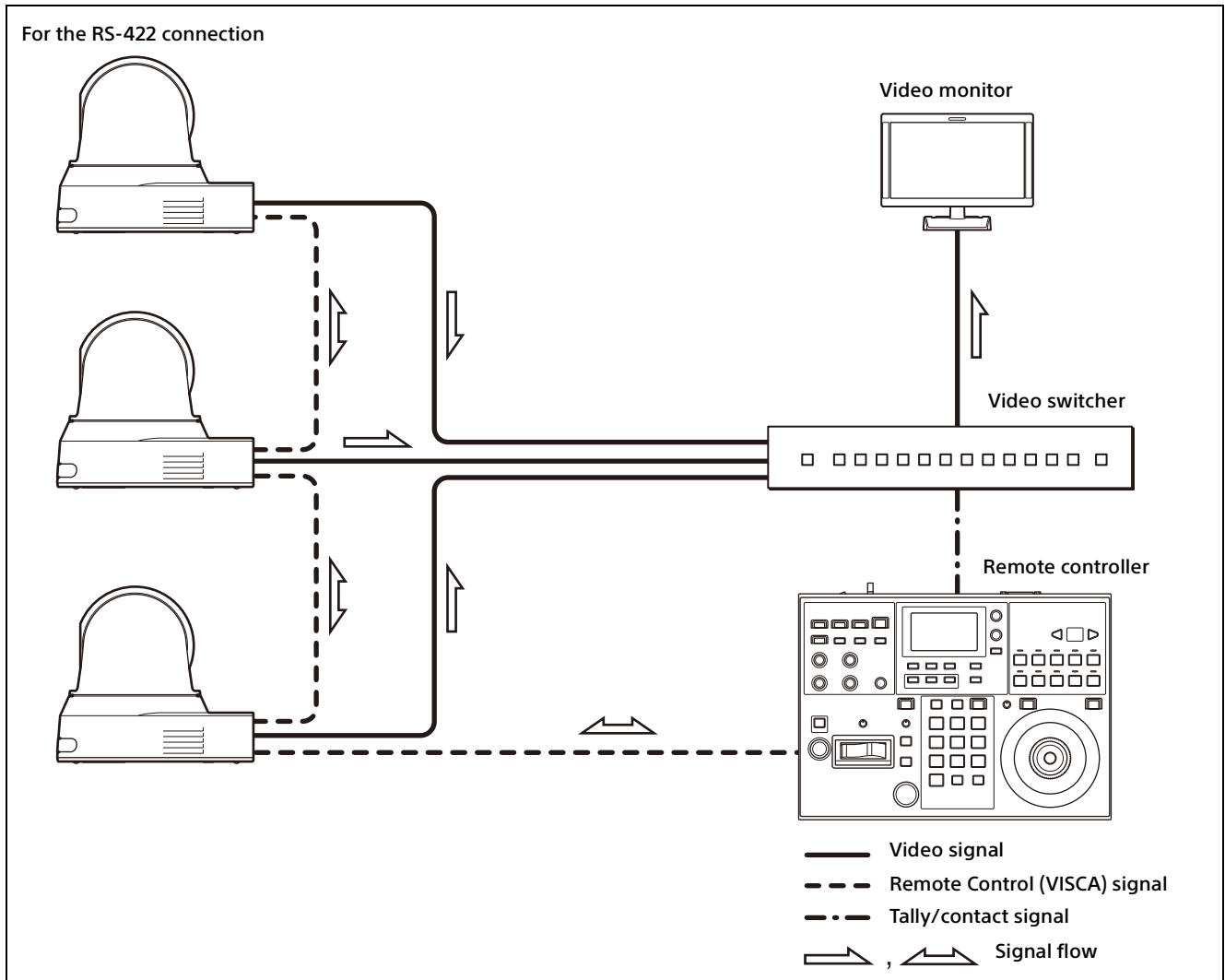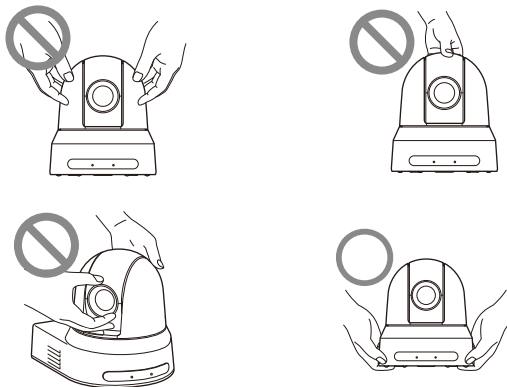Use a tripod with screws of the following specifications.
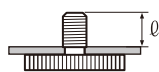
ℓ = 4.5 to 7 mm
ℓ = 0.18 to 0.27 inches

WARNING

Installation of the camera using the tripod screws and screw holes should not be done for installation on a ceiling or a shelf, etc., in a high position.

Installing the Camera Using the M3 Fixing Screw Holes

Attach the camera using 4 M3 fixing screw holes located on the bottom of the camera.
Attach the camera to a fitting with a flat surface using M3 screws with the following specifications.

M3 screw
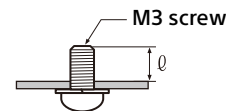
ℓ = 3 to 8 mm
ℓ = 0.12 to 0.31 inches

Installing the camera on the ceiling

Using the supplied ceiling bracket (A)/(B), wire rope, and screws, you can attach the camera to the ceiling. When you install the camera, always install it on a level ceiling. If you install it on a sloping or uneven ceiling, make sure that the place where you install it is within ±15 degrees of the horizontal.

CAUTION

- Entrust installation to an experienced contractor or installer when installing the camera on ceilings or other high locations.
- When installing the camera in a high location, be sure that the location and installation components (excluding the supplied accessories) are strong enough to support the camera and the mounting bracket, and install the camera securely. If the components are not strong enough, the camera may fall and cause serious injury.
- Always install the supplied wire rope to prevent the camera from falling.
- If you install the camera in a high location, check periodically, at least once a year, to ensure that the connection has not loosened. If conditions warrant, make this periodic check more frequently.

Before installing the camera

Determine the shooting direction of the camera, and then make the holes for the ceiling bracket (B) and the connecting cables on the ceiling.

How to install the camera

1 Attach the wire rope to the ceiling.

Ceiling

Hole for connecting cable
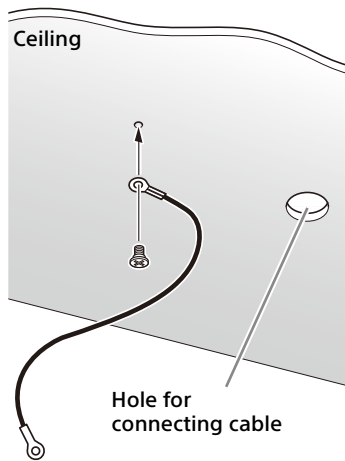
1-2 In the case that a wire cannot be attached on the ceiling, attach the wire on the ceiling bracket (B) as illustrated below with the supplied screws (M3×8).
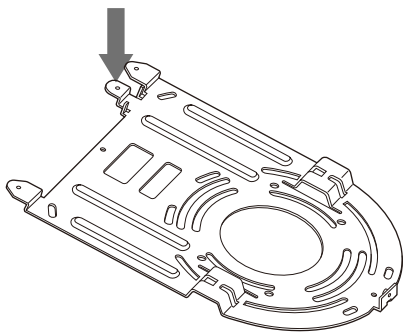
WARNING

Use the supplied screw. Otherwise, the wire rope may not function properly.

2 Attach the ceiling bracket (B) to the ceiling.
When attaching the ceiling bracket (B) to the ceiling, it is recommended to fix at the 4 positions illustrated below.
There are elongated holes for the screws along the rounded edges of the ceiling bracket (B). Later, the front of the camera will be positioned along this edge. Face the camera to the front, adjust the aim, and attach it securely.

Ceiling

Ceiling bracket (B)
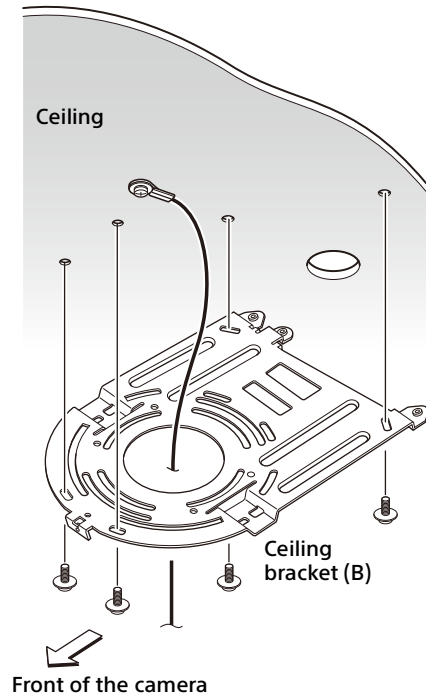
Front of the camera

3 Attach the ceiling bracket (A) to the bottom of the camera using the 4 screws (M 3 × 8) supplied.
Align the bracket holes with the screw holes on the camera, and attach the bracket to the camera.
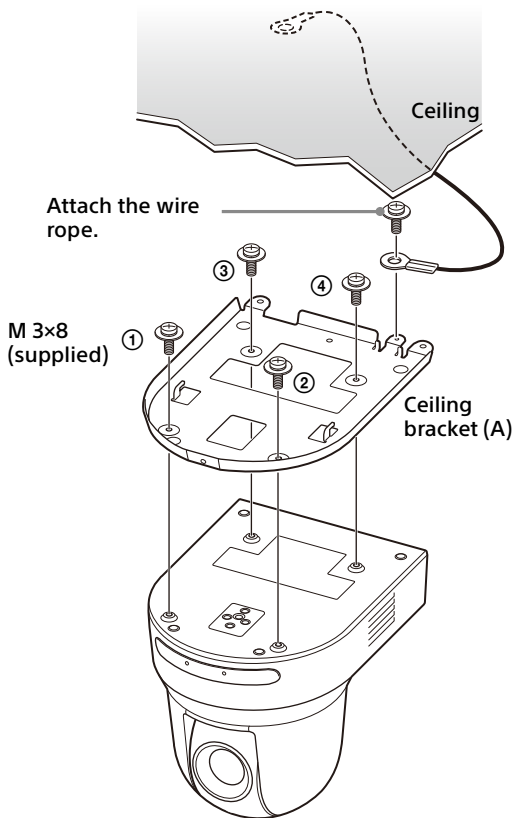
Attach the wire rope.

M 3×8 (supplied) ①

③ ④

②

Ceiling

Ceiling bracket (A)

Lightly tighten screws temporarily in the order indicated in the figure.
Afterwards, screw each of them firmly.

CAUTION

Use the supplied screws. Otherwise, you may break the internal parts of the camera.

4 Insert the protrusions raised on the ceiling bracket (A) into the spaces prepared in the ceiling bracket (B), and temporarily attach them by pushing the ceiling bracket (A) to the rear.

Ceiling bracket (B)

Ceiling
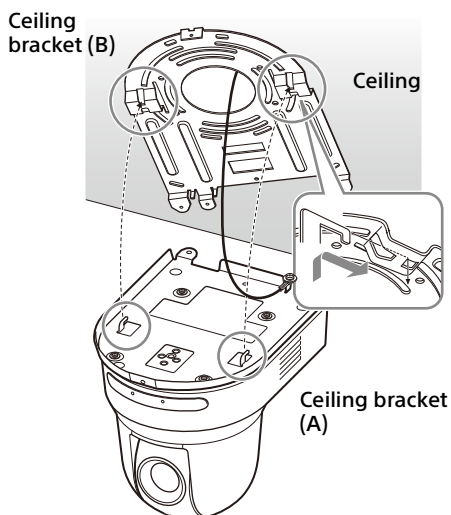
Ceiling bracket (A)

5 While pushing up the entire camera, attach it to the ceiling bracket (B) using the 3 screws (M3 × 8) supplied.
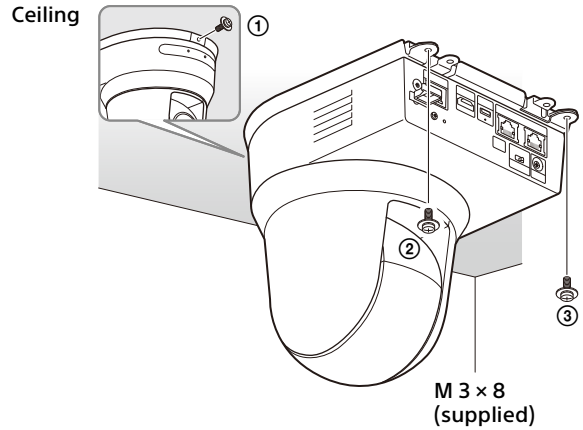
Ceiling

① ② ③

M 3 × 8 (supplied)

Lightly tighten screws temporarily in the order indicated in the figure. Afterwards, screw each of them firmly.

6-1 Connect the cables to the terminals at the back of the camera.

Ceiling
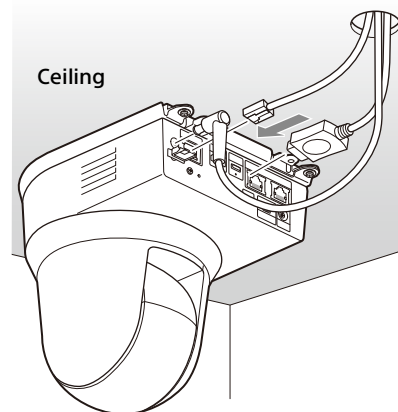
Notes

- Make sure no load is applied to the connectors of the cables.
- For measures that prevent the HDMI cable from being pulled out, proceed to "6-2" after connecting the HDMI cable. Then, connect all the other cables.

6-2 To prevent the HDMI cable from coming off, mount the HDMI cable fixing plate with the supplied screw (single, M2.6 × 6, black) on the back of the camera, then fix the HDMI cable with a banding band etc.

HDMI cable fixing plate

M 2.6 × 6 (supplied)

Banding band
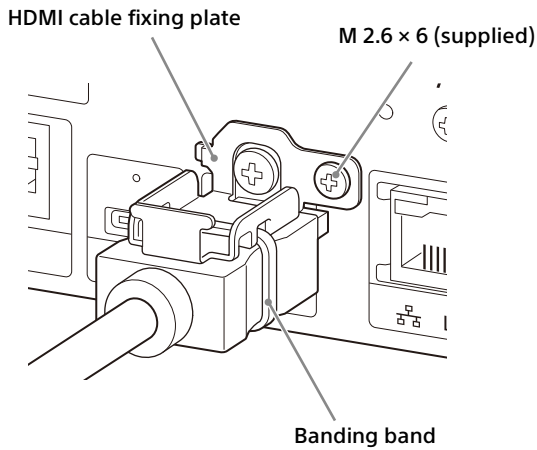
Note

Do not attach the HDMI cable on the camera, if you do not use it.

7 Adjust the image flip function to optimize the ceiling mounting status.

Note

All preset settings will return to their default settings when changing the setting of the image flip function. When setting, make sure to set the image flip function before the preset settings.

How to remove the camera

1 Remove the 3 screws used to attach the camera in step 5 of "How to install the camera".

2 While pushing the entire camera up towards the ceiling, move the camera to the front.
The hooks will disengage, and you can remove the camera.

Connecting the Camera

Connecting to an AC power supply

Connect the camera to an AC outlet using the supplied AC adapter and power cord.

To power supply

AC adapter
(supplied)
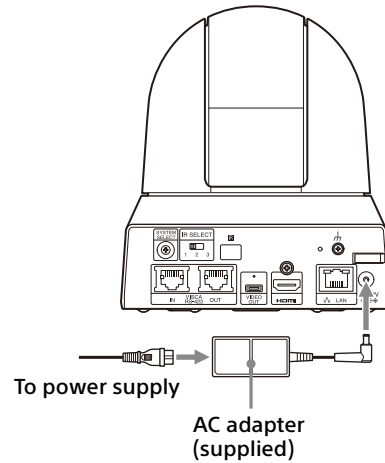
1 Connect the supplied AC adapter and power cord.
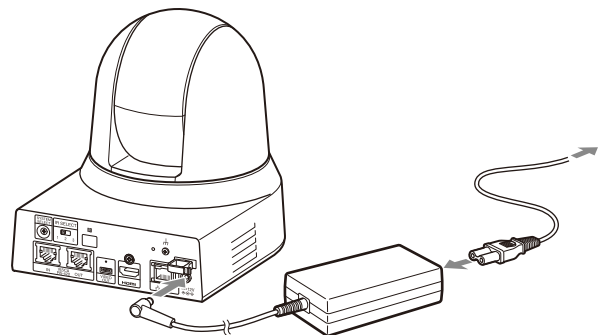
2 **Fix the cord of an AC adapter with the cord clamper so that it does not come out.**
Unlock the cord clamper and put the cord through it.
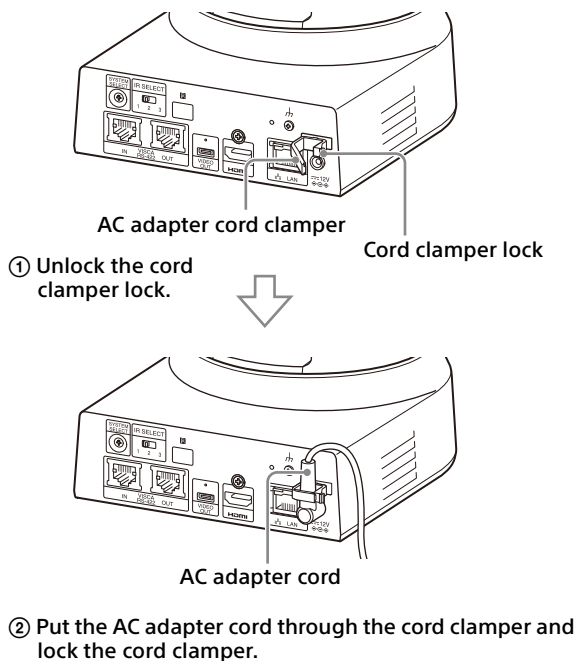
AC adapter cord clamper

Cord clamper lock

① Unlock the cord clamper lock.

AC adapter cord

② Put the AC adapter cord through the cord clamper and lock the cord clamper.

Note

Do not use any AC adapter other than the supplied AC adapter. Otherwise, a fire or malfunction may occur.

Connecting the camera to a PoE+ (Power over Ethernet Plus) power supply device

A PoE+ (IEEE802.3at compliant) power supply device supplies power through a commercially available network cable. For details, see the operating instructions of the power supply device.

Network cable (commercially available)

Hub with PoE+ power supply feature
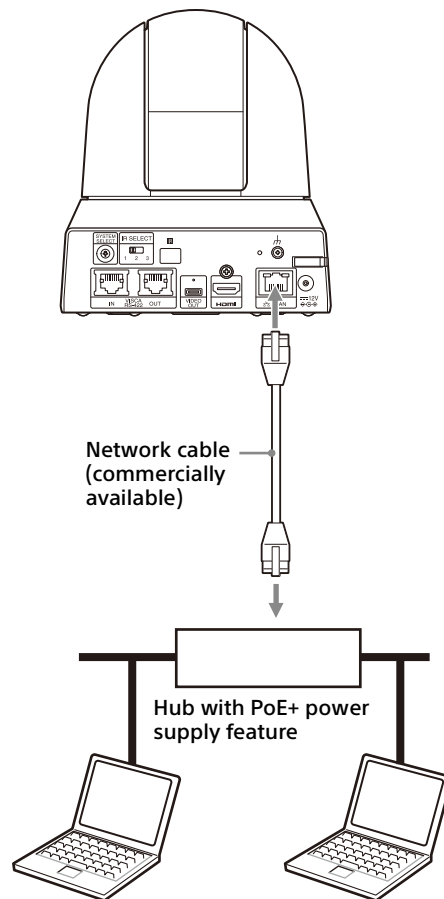
Notes

- When you supply power from a PoE+ power source, use a network cable of Category 5e or higher.
- Do not have both the AC adapter and PoE+ power supply connected at the same time.
- When power is supplied from PoE+, the POWER lamp (green) flashes until the initial verification process is complete. The lamp flashes for approximately 1 minute. However, this length of time differs depending on the power supply device.
- When the network camera is powered by a PoE+ power supply, do not route the wiring outdoors.
- If a device not compatible with PoE+ is connected, the POWER lamp (green) flashes, and the camera does not start.
- When you turn the power off, wait at least 10 seconds before you turn it on again.
- Use an STP (shielded) network cable.

Connecting a single camera to a switcher, recorder, or monitor

Devices equipped with an HDMI input terminal

HDMI cable (not supplied)

To HDMI input terminal

Video monitor
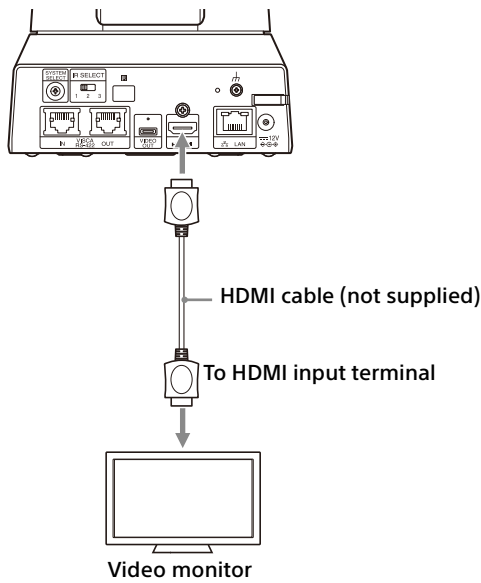
Connecting a single camera to a computer

USB cable (not supplied)

To USB terminal

Computer
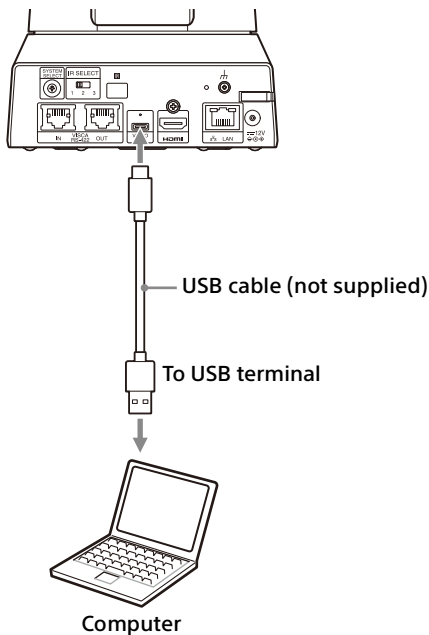
Connecting a single camera to a single remote controller (not supplied)

Select either VISCA over IP or VISCA RS-422 with the remote controller. For details, see the operating instructions of the remote controller.

Using VISCA over IP (LAN terminal)

To LAN terminal

Network cable (commercially available)
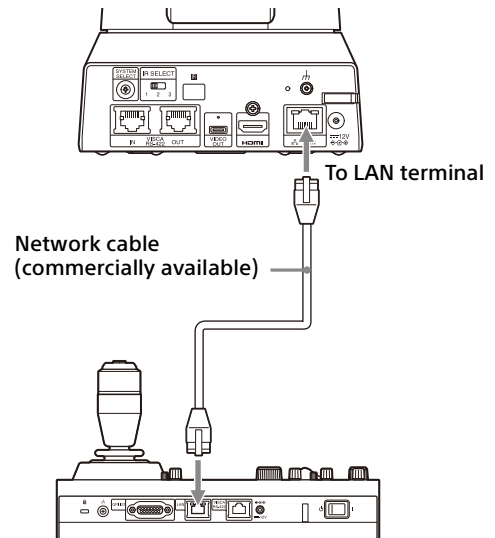
Connecting a single camera to a remote controller directly
* Use a cross network cable.

Using the VISCA RS-422 terminal
A remote controller can be connected via the VISCA RS-422 terminal. The VISCA RS-422 allows connections of up to 1.2 km in length.

Network cable (commercially available)

* Use straight network cable.

Connecting multiple cameras to a single remote controller (not supplied)

Select either VISCA over IP or VISCA RS-422 with the remote controller. For details, see the operating instructions of the remote controller.

Using the VISCA RS-422 terminal
Up to 7 cameras can be connected via the VISCA RS-422 terminal. The VISCA RS-422 allows connections of up to 1.2 km in length.

Network cable
(commercially available)

Network cable
(commercially available)

Network cable
(commercially available)
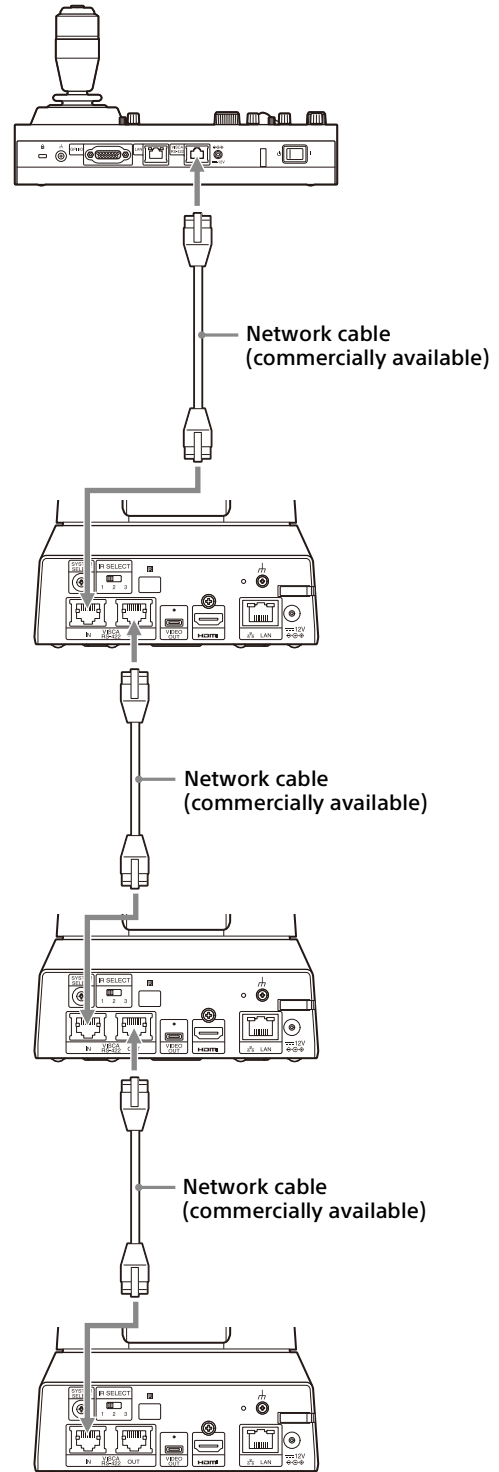
* Use straight network cables.

Note

When RM-IP10 is used, make a connecting cable using the camera and the RS-422 terminal board connectors supplied with the remote controller. When you make the connecting cable, refer to the pin array of the VISCA RS-422 terminal (page 52) and the VISCA RS-422 connection diagram (page 52).

Connecting multiple cameras using VISCA over IP

When you connect multiple cameras to a single remote controller or when you connect multiple cameras to multiple remote controllers with a computer, use a switching hub for the connection.

Network cable (commercially available)

HUB (commercially available)

Network cable (commercially available)

Network cable (commercially available)

Network cable (commercially available)
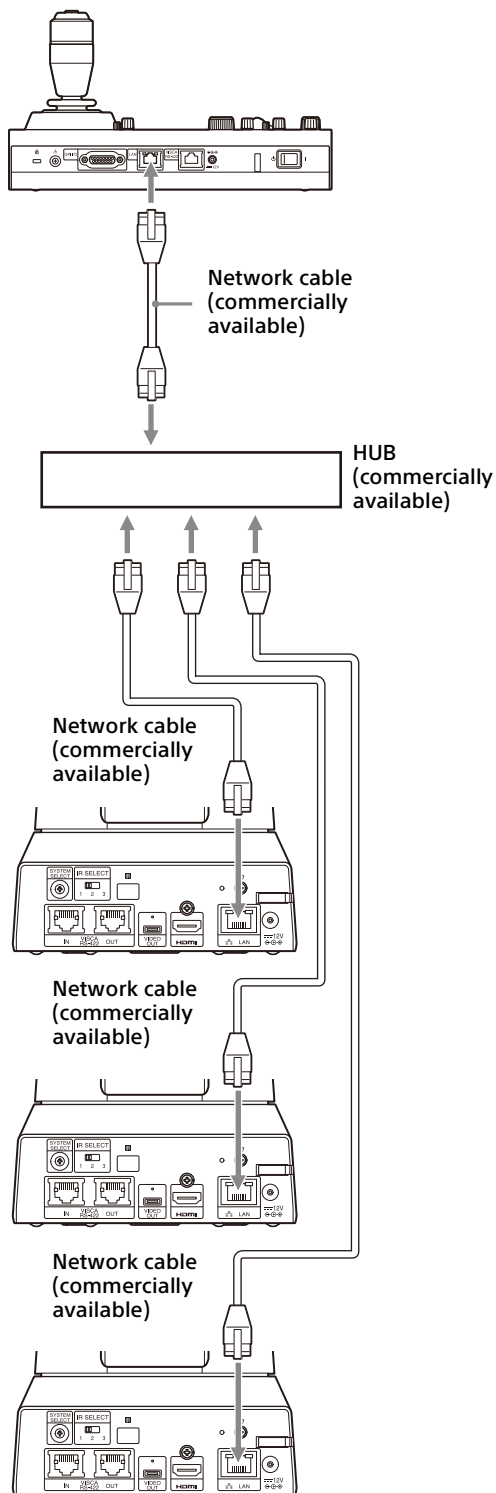
* Use straight network cables.

Connecting a commercially available video switcher

When you want to switch cameras, connect a commercially available video switcher.
For the connection to the video switcher, refer to the operating instructions of the switcher.
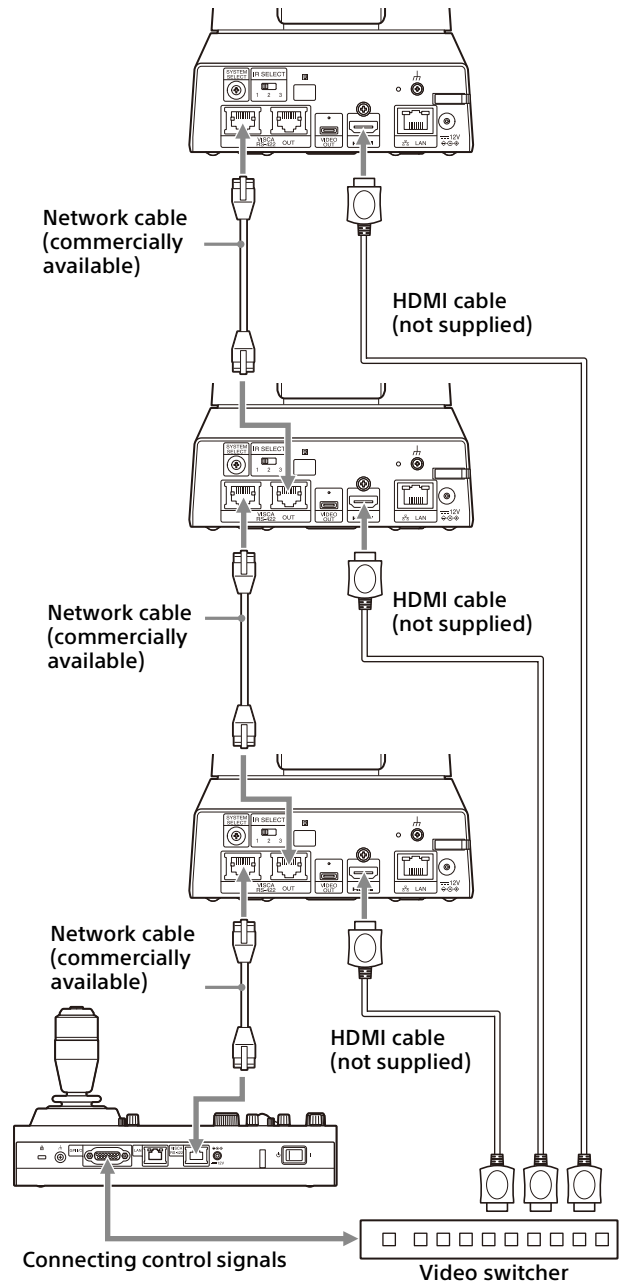
Network cable (commercially available)

HDMI cable (not supplied)

Network cable (commercially available)

HDMI cable (not supplied)

Network cable (commercially available)

HDMI cable (not supplied)

Connecting control signals

Video switcher

* Use straight network cables.

Before Starting Operations

Before operating, check that the camera and peripheral devices are properly installed and connected.

For details, see "Installing the Camera" (page 14) and "Connecting the Camera" (page 17).

Turning on the Power

POWER lights
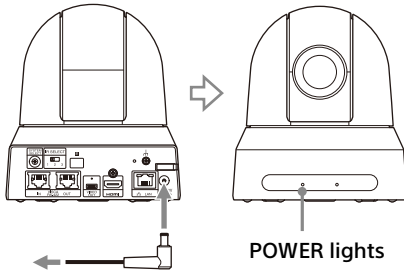
To the AC adapter (supplied)

1 **Connect the camera to an AC outlet using the supplied AC adapter and power cord.**
Or, connect the powered PoE+ power supply device and the camera with a LAN cable.

The power is turned on and the POWER lamp turns green.
When the power is turned on, the camera will automatically pan and tilt (pan/tilt reset), and then stops at the position stored as PRESET 1.

2 **Turn on the peripheral devices.**
If the POWER button on the remote commander is pressed while the camera is turned on, the camera goes into the standby mode. The POWER lamp turns off and the STANDBY lamp turns on.

> **Note**
>
> Wait at least 10 seconds if you want to turn on the camera again after putting it in the standby mode.

Operating Multiple Cameras Using the Infrared Remote Commander

1 **Set the IR SELECT switch on the back of the camera you want to operate to 1, 2, or 3.**

1 2 3
IR SELECT

2 **Press the CAMERA SELECT button on the remote commander that corresponds to the number set in step 1.**
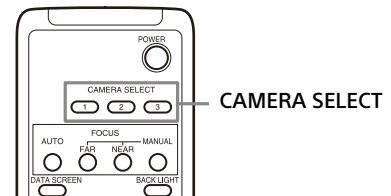
CAMERA SELECT

You can then operate the specified camera(s). Every time you operate the camera(s) using the remote commander, the CAMERA SELECT button pressed in step 2 lights up.

Pan/Tilt Operation

1 ────────── CAMERA SELECT

REV

STD ─────── 2

PAN-TILT RESET

HOME

L/R DIRECTION SET
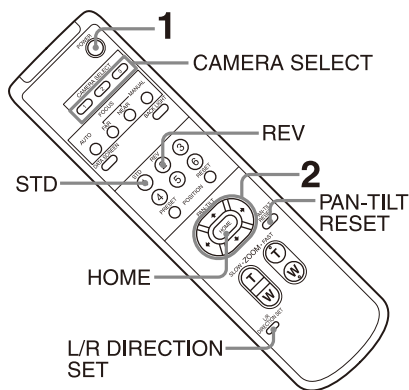
1 **Press the POWER button.**
The camera will turn on and perform the pan/tilt reset action automatically.

2 **Press an arrow button to pan or tilt the camera.**
While checking the picture on the screen, press the appropriate arrow button.
To move the camera little by little, press the button just for a moment.
To move the camera in a wide range, press and hold the button.
To move the camera diagonally, press the ← or → button while holding down the ↑ or ↓ button.

To face the camera back to the front

Press the HOME button.

If you accidentally move the camera with your hand

Press the PAN-TILT RESET button to perform the pan/tilt reset action.

When the camera moves in a different direction from what you intended

The camera is preset to face toward the right whenever the → button is pressed. You might wish to reverse the direction in which the camera moves, for example, when you change the direction of the camera while checking the picture on the screen. In such cases, press the 2 (REV) button while holding down the L/R DIRECTION SET button. To reset the setting, press the 1 (STD) button while holding down the L/R DIRECTION SET button.

Arrow button	Movement of the camera	Setting
		While holding down L/R DIRECTION SET Press STD ①
		While holding down L/R DIRECTION SET Press REV ②

Note

The above setting changes only the signal emitted from the remote commander, and does not change the setting of the camera itself. Therefore, repeat the setting process for each remote commander if you are using more than one remote commander.

If the POWER lamp and STANDBY lamp on the camera flash simultaneously, and "PAN-TILT ERROR!" is displayed on the menu screen

If the camera is moved by external shock, or objects or your fingers are caught in the camera, the microcomputer inside the camera may not be able to store the pan/tilt position properly, in which case the motion automatically stops.
To reset the pan/tilt position, press the PAN-TILT RESET button or turn off the camera and turn it on again.

Zoom Operation

Press either of the ZOOM buttons.

Subject appears farther away. (Wide angle)

Subject appears closer. (Telephoto)

Zooms in or out slowly (SLOW side)

Zooms in or out quickly (FAST side)
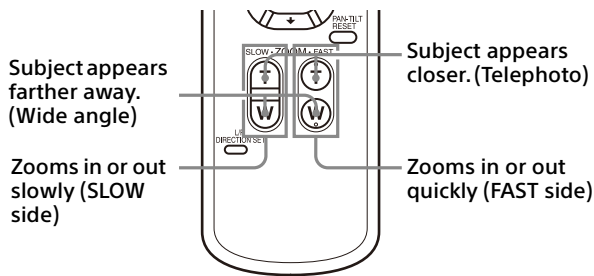
Note

When you perform pan/tilt operations while the camera is in telephoto mode, the moving speed of the image on the screen may be a little jerky.

Adjusting the Camera

NEAR

MANUAL

BACK LIGHT

AUTO

FAR
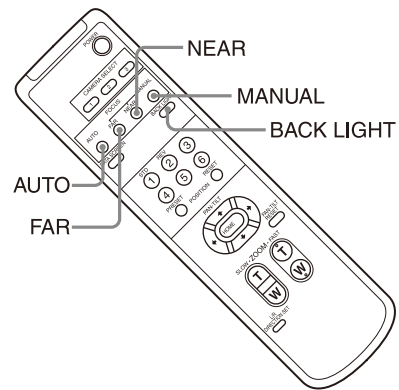
Focusing on a subject

To adjust the focus automatically

Press the AUTO button.
The camera focuses on the subject in the center of the screen automatically.

To adjust the focus manually

After pressing the MANUAL button, press either the FAR or the NEAR button to adjust the focus.

Focusing on a far off subject

Focusing on a nearby subject
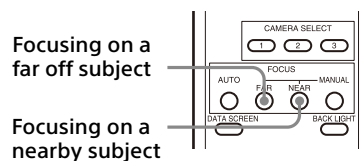
Shooting with back lighting

When you shoot a subject with a light source behind it, the subject becomes dark. In such cases, press the BACK LIGHT button.
To cancel the function, press the BACK LIGHT button again.
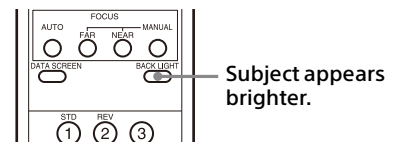
Subject appears brighter.

Note

The BACK LIGHT button is enabled when MODE (Exposure mode) on the EXPOSURE menu is set to [FULL AUTO] (Full auto), [SHUTTER Pri] (Shutter priority), or [IRIS Pri] (Iris priority).

Storing the Camera Settings in Memory – Preset Feature

Settings, including the camera position, zoom, focus, and backlighting, can be stored in a preset.

Notes

The camera supports up to 100 presets. The number of presets that are supported will vary depending on the device used.
– For the RM-IP500 (sold separately), up to 100.
– For the RM-IP10 (sold separately), up to 16.
– For the remote commander (supplied), up to 6.

For details on the camera settings that can be preset, see "Items Stored in the Preset" (page 47).

Storing the camera status
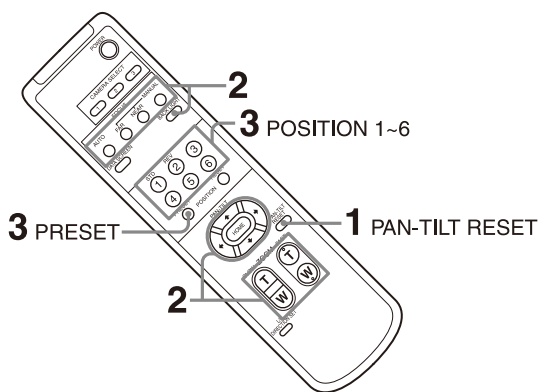
1　Press the PAN-TILT RESET button to reset the pan/ tilt position.

2　Adjust the position, zoom (See page 24), and focus of the camera (See page 24).

3　Hold down the PRESET button and press any of the POSITION buttons, 1 to 6, in which you want to store the settings.
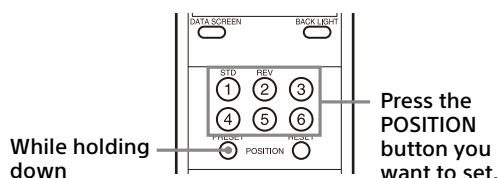
Note

Before you store the position, zoom, focus, etc. of the camera, make sure to install and secure the camera in place to use it properly.

Recalling the stored status

Press any of the POSITION 1 to 6 buttons in which you have stored the settings.

Clearing the preset memory

Hold down the RESET button and press the desired POSITION button 1 to 6 for which you want to clear the settings.
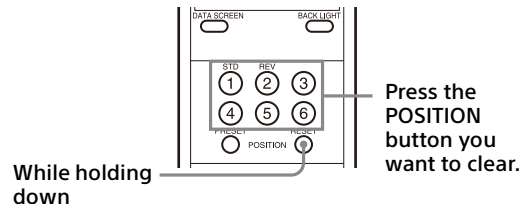
Notes

- If you want to retain the previous pan and tilt positions when the power is turned off and turned on again, store those positions in PRESET 1.
- Storing or clearing the settings in PRESET 1 takes about 2 seconds longer than for other preset operations.
- When you are storing or clearing the settings in one PRESET, you cannot restore, store or clear the settings in another PRESET.
- For details on the items that can be cleared from the memory, see "Items Stored in the Preset" (page 47).
- You can register or delete the preset even while the menu is being displayed. However, you cannot perform the pan/tilt operation.
- Note that if you change the image flip setting, the set preset will be cleared.

Operating Menus

This section explains how to configure the camera using the supplied remote commander.

For details on the menu items, refer to page 28 through page 39.

Displaying a menu
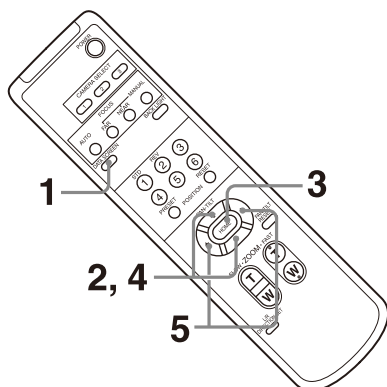
1 Press the DATA SCREEN button.
The main menu is displayed.

2 Use the ♠ or ♣ button to move the cursor to the menu item you want to change.

3 Press the HOME button.
The selected menu is displayed.

4 Use the ♠ or ♣ button to move the cursor to the setting item you want to change.

5 Use the ♠ or ♣ button to change the set value.

Note

[IR RECEIVE] cannot be set to [OFF] in the SYSTEM menu when you operate the menu with the supplied remote commander. Set [IR RECEIVE] to [OFF] using the remote controller (not supplied).

Returning to the main menu

Press the DATA SCREEN button.

Canceling a menu

When the main menu is displayed, press the DATA SCREEN button once. When a setting menu is displayed, press the DATA SCREEN button twice.

About On-Screen Menus

You can configure the shooting conditions and system setup of the camera from the menus displayed on an external monitor. Display settings menus are described as OSD menus in this document.

Menu operations can be performed using the supplied remote commander or a remote controller (sold separately).

For details, refer to the operating instructions of the remote controller.

Show/hide menu switch

Item select

Confirm selection/ execute operation
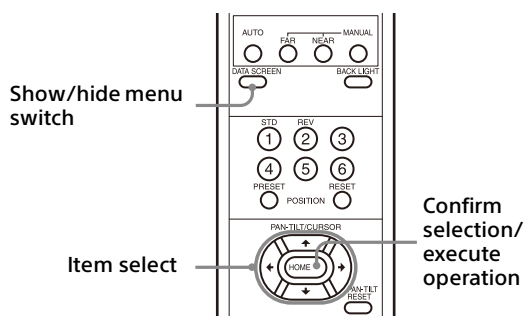
This section explains how to read the on-screen menus before starting menu operations.

For the overall menu configurations, see page 40.

Notes

- You cannot perform pan/tilt/zoom operations while the menu is displayed.
- The menus are output through HDMI OUT and VIDEO OUT.

Confirming selection of menu items and settings/Executing operations

The buttons used for setup operations are displayed along the bottom of the menu screen that is being displayed.

"UP" / "DOWN" : SELECT or "UP" / "DOWN" / "LEFT" / "RIGHT" : SELECT
Indicates use of the ♠/♣/♦/➡ buttons to select menu items and settings. These correspond to the joystick directions on a remote controller.

"ENTER" : NEXT
Indicates use of the HOME button (equivalent to ENTER) to confirm the menu item or setting selection, or to advance to the next screen or next operation. This corresponds to the joystick button on a remote controller.

"MENU" : EXIT
Indicates use of the DATA SCREEN button (equivalent to MENU) to show/hide the menu screen.

"MENU" : BACK
Indicates that you can return to the main menu by pressing the DATA SCREEN button.

The method used to display the menu will vary depending on the remote controller model. Refer to the operating instructions of the remote controller (sold separately).

Main menu

Press the DATA SCREEN button on the remote commander to display the main menu.
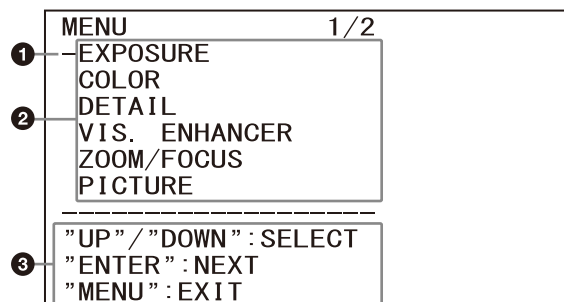
❶ **Cursor**
The cursor selects a setting menu.
Press the ♠ or ♣ button of the remote commander to move the cursor up or down.

❷ **Menu items**
Press the ♠ or ♣ button of the remote commander to select a setting menu, and then press the HOME button to display the selected setting menu.

❸ **Control button display section**

Setting menu

The setting menu selected on the main menu is displayed.

```
❶─EXPOSURE           1/3
❷──MODE          MANUAL
   ┌──────┐   ┌──────┐
   │ GAIN │   │  6DB │
❸─│ SPEED │  │ 1/60 │──────❹
   │ IRIS │   │ F2.0 │
   └──────┘   └──────┘

   ──────────────────
   ┌──────────────────┐
   │"UP"/"DOWN"/"LEFT"/│
   │"RIGHT":SELECT    │
❺─│"MENU":BACK       │
   └──────────────────┘
```
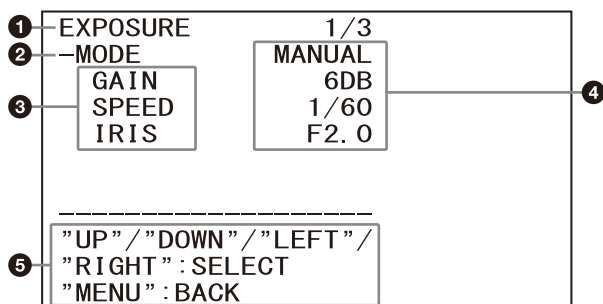
❶ **Setting menu**
The name of the setting menu currently selected is displayed.

❷ **Cursor**
The cursor selects a setting item.
Press the ♠ or ♣ button of the remote commander to move the cursor up or down.

❸ **Setting items**
The setting items for this setting menu are displayed.
Press the ♠ or ♣ button of the remote commander to select a setting item. Press the ♠ or ♣ button to change the set value.

❹ **Set value**
The current set values are displayed.
Press the ♠ or ♣ button of the remote commander to change the set value.

❺ **Control button display section**

For the default value of each setting item, see "Menu Configuration" (page 40).

Status

Display the items selected in the menu and device information.

EXPOSURE Menu

The EXPOSURE menu is used to set the items regarding the exposure.

```
EXPOSURE           1/3
─MODE          MANUAL
   GAIN            6DB
   SPEED          1/60
   IRIS           F2.0
```

Note

When the high-sensitivity mode is set to ON, the available setting range differs. High-sensitivity mode is set to OFF at the factory settings. To turn it ON, use the VISCA command.

MODE

[FULL AUTO]: The exposure is adjusted automatically using the gain, electronic shutter speed, and iris setting.
[MANUAL]: You can manually adjust the gain, electronic shutter speed, and iris setting individually.
[SHUTTER Pri]: You can adjust the electronic shutter speed manually. Automatically adjusts the exposure using the gain and iris.
[IRIS Pri]: You can adjust the iris setting manually. Automatically adjusts the exposure using the gain and electronic shutter speed.

When you select any of the above modes, you will see available options for the selected mode among the following setting items.

GAIN

Select the gain.
When [MODE] is [MANUAL], you can choose a value from 0 to 36 dB (in 3 dB increments). When high-sensitivity mode is set to ON, the available range is expanded from 0 to 48 dB (in 3 dB increments).

SPEED

When [MODE] is either [MANUAL] or [SHUTTER Pri], select the electronic shutter speed.
When the signal format is 59.94 or 29.97
You can choose from [1/1], [2/3], [1/2], [1/3], [1/4], [1/6], [1/8], [1/10], [1/15], [1/20], [1/30], [1/50], [1/60], [1/90], [1/100], [1/125], [1/180], [1/250], [1/350], [1/500], [1/725], [1/1000], [1/1500], [1/2000], [1/3000], [1/4000], [1/6000], [1/10000].

When the signal format is 50 or 25
You can choose from [1/1], [2/3], [1/2], [1/3], [1/4], [1/6], [1/8], [1/12], [1/15], [1/20], [1/25], [1/30], [1/50], [1/60], [1/100], [1/120], [1/150], [1/215], [1/300], [1/425], [1/600], [1/1000], [1/1250], [1/1750], [1/2500], [1/3500], [1/6000], [1/10000].

IRIS

When [MODE] is either [MANUAL] or [IRIS Pri], you can change the iris setting.
You can choose from [F2.0], [F2.2], [F2.4], [F2.6], [F2.8], [F3.1], [F3.4], [F3.7], [F4.0], [F4.4], [F4.8], [F5.2], [F5.6], [F6.2], [F6.8], [F7.3], [F8.0], [F8.7], [F9.6], [F10], [F11], [CLOSE].

AE SPEED

Select the adjustment speed for exposure adjustment.
You can adjust the speed at which the camera reaches the optimum exposure setting from [1] (standard) to [48] (slow). Adjust this when the brightness of the object changes instantaneously.
This setting is available when [MODE] is [FULL AUTO], [SHUTTER Pri], or [IRIS Pri].

EX-COMP

Turn this [ON] when you want to correct brightness of a picture whose exposure is already automatically adjusted. This setting is available when [MODE] is [FULL AUTO], [SHUTTER Pri], or [IRIS Pri]. The [LEVEL] setting is displayed when this is turned [ON].

LEVEL

Set a level to adjust the brightness of a picture whose exposure is already automatically adjusted. Choose a value from [–7] to [+7] for the level.
This is not displayed when [EX-COMP] is turned [OFF].

GAIN LIMIT

Set the maximum gain when exposure is automatically adjusted using gain. Choose a value from [9dB] to [36dB] (in 3 dB increments). When high-sensitivity mode is set to ON, the available range is expanded from [21dB] to [48dB] (in 3 dB increments).
This setting is available when [MODE] is [FULL AUTO], [SHUTTER Pri], or [IRIS Pri]. You cannot choose a value smaller than the [POSITION] setting.

GAIN POINT

When you set [MIN SPEED] to be slower than the output image frame rate, the shutter speed

controls exposure based on the [GAIN POINT] setting. Normally, when exposure is controlled with gain, noise becomes prominent if gain is increased to make the image brighter. You can decrease noise by adjusting the exposure with lower shutter speeds after canceling gain adjustments. When you do this, set [GAIN POINT] to [ON] and set the [POSITION] to the gain at which you want the shutter speed to change. When the shutter speed reaches [MIN SPEED] for exposure adjustment, the gain will increase to adjust exposure. This setting is available when [MODE] is either [FULL AUTO] or [IRIS Pri].

POSITION

This is enabled when [GAIN POINT] is turned [ON]. When gain during exposure adjustment reaches the value for [POSITION], exposure is adjusted through a slower shutter speed. This setting is available when [MODE] is either [FULL AUTO] or [IRIS Pri]. You cannot choose a value smaller than the [GAIN] setting.

MAX SPEED

Set the maximum (fastest) shutter speed when exposure is automatically adjusted with the electronic shutter.
This setting is available when [MODE] is either [FULL AUTO] or [IRIS Pri]. You cannot choose a value slower than [MIN SPEED].
When the signal format is 59.94 or 29.97
You can choose from [1/30], [1/50], [1/60], [1/90], [1/100], [1/125], [1/180], [1/250], [1/350], [1/500], [1/725], [1/1000], [1/1500], [1/2000], [1/3000], [1/4000], [1/6000], [1/10000].
When the signal format is 50 or 25
You can choose from [1/25], [1/30], [1/50], [1/60], [1/100], [1/120], [1/150], [1/215], [1/300], [1/425], [1/600], [1/1000], [1/1250], [1/1750], [1/2500], [1/3500], [1/6000], [1/10000].

MIN SPEED

Set the minimum (slowest) shutter speed when exposure is adjusted with the electronic shutter. This setting is available when [MODE] is either [FULL AUTO] or [IRIS Pri]. You cannot choose a value faster than [MAX SPEED].
When the signal format is 59.94 or 29.97
You can choose from [1/1], [2/3], [1/2], [1/3], [1/4], [1/6], [1/8], [1/10], [1/15], [1/20], [1/30], [1/50], [1/60], [1/90], [1/100], [1/125], [1/180], [1/250], [1/350], [1/500], [1/725], [1/1000], [1/1500], [1/2000], [1/3000], [1/4000], [1/6000], [1/10000].
When the signal format is 50 or 25
You can choose from [1/1], [2/3], [1/2], [1/3], [1/4], [1/6], [1/8], [1/12], [1/15], [1/20], [1/25], [1/30], [1/50], [1/60], [1/100], [1/120], [1/150], [1/215], [1/300], [1/425], [1/600], [1/1000], [1/1250], [1/1750], [1/2500], [1/3500], [1/6000], [1/10000].

BACKLIGHT

This menu allows you to enable/disable backlight compensation so that exposure is optimized for backlight. You can choose either [ON] or [OFF]. This setting is available when [MODE] is [FULL AUTO], [SHUTTER Pri], or [IRIS Pri].

SPOTLIGHT

This menu allows you to enable/disable spotlight compensation by adjusting the exposure darker when a part of the object is bright, such as a person's face in spotlight. You can choose either [ON] or [OFF]. This setting is available when [MODE] is [FULL AUTO], [SHUTTER Pri], or [IRIS Pri]. [SPOTLIGHT] becomes disabled when [BACKLIGHT] is [ON].

SLOW SHUTTER

When you set the mode to [ON], the camera automatically uses slow shutter speed for exposure as the illumination of the object to be shot decreases. This menu is available when [MODE] is [FULL AUTO] or [IRIS Pri].

COLOR Menu

The COLOR menu is used to adjust the white balance and the color.

```
COLOR
─WHITE BALANCE MODE
                MANUAL


    R. GAIN            81
    B. GAIN            37
```

WHITE BALANCE MODE

Select a white balance mode.
You can choose from [AUTO1], [AUTO2], [INDOOR], [OUTDOOR], [ONE PUSH], and [MANUAL].

[AUTO1]: Automatically adjusts the color to be closest to the image you are viewing.

[AUTO2]: Automatically adjusts the white balance to reproduce the original colors of the objects, eliminating the influences of ambient illumination.

[INDOOR]: Fixes R/B GAIN when the color temperature is 3200 K.

[OUTDOOR]: Fixes R/B GAIN when the color temperature is 5800 K.

[ONE PUSH]: White balance is adjusted when the ONE PUSH trigger command is received. When you operate from the remote controller, press the O.P.AWB button on RM-IP500 or the ONE PUSH AWB button on RM-IP10. Shoot a large white object in the center of the screen before adjustment. White balance is adjusted when you press the HOME button on the supplied remote commander or the joystick top button on the remote controller while [ONE PUSH] is selected in [WHITE BALANCE MODE] on the menu screen.

[MANUAL]: Allows you to manually adjust the white balance.

When you select any of the above modes, you will see available options for the selected mode among the following setting items.

SPEED

Adjust the speed at which the camera reaches the white convergence point when [AUTO1] or [AUTO2] is chosen. Choose a value from [1], [2], [3], [4], and [5]. [5] is the fastest and [1] is the slowest.

OFFSET

The shift amount of the white convergence point can be adjusted when [WHITE BALANCE MODE] is [AUTO1], [AUTO2], or [ONE PUSH]. The range is from [−7] to [0] to [+7]. White balance is shifted toward blue when a negative value is chosen, and it is shifted toward red when a positive value is chosen.

R.GAIN
B.GAIN

Displayed when [MANUAL] is chosen. White balance can be manually adjusted within the range from [−128] to [+127].

DETAIL Menu

The DETAIL menu is used to adjust the image enhancer function.

```
DETAIL          1/2
-MODE         MANUAL
 LEVEL            0
 BAND WIDTH DEFAULT
 CRISPENING       3
 HV BALANCE       0
 BW BALANCE   TYPE2
```

MODE

When you choose [AUTO], contour correction signal is automatically added.
When you want to make adjustment by yourself, choose [MANUAL].
Only [LEVEL] will be displayed when you choose [AUTO].

LEVEL

You can set the volume of the contour correction signal. Choose a value from [−7] to [0] to [+8]. The greater the value, the stronger the contour correction signal.

BAND WIDTH

You can set the bandwidth for signals undergoing contour emphasis. Choose a bandwidth from [DEFAULT], [LOW], [MIDDLE], [HIGH], and [WIDE]. For example, when you choose [MIDDLE], the middle range of the signals is elevated, and contours in that middle range are emphasized.

CRISPENING

You can choose the fineness for the objects to which contour correction signals are added. Choose a value from [0] to [7]. When you choose a higher value, minute contour correction signal elements are removed, and only the high level contour correction signals are left, which reduces noise. When you choose a lower value, minute contour correction signal elements are added to the picture, which increases noise.

HV BALANCE

You can choose the ratio for horizontal and vertical contour correction signal elements. Choose a value from [−2] to [0] to [+2]. When you choose a higher value, the horizontal contour correction elements become greater compared to the vertical elements.

BW BALANCE

You can adjust the balance between contours in black on the low brightness side of the spectrum and contours in white on the high brightness side. Choose from [TYPE0] to [TYPE4]. The ratio of contours in black is higher for [TYPE0] while the ratio of contours in white is higher for [TYPE4].

LIMIT

You can set the maximum value for the amount of contour emphasis in black on the low brightness side of the spectrum and in white on the high brightness side. Choose a value from [0] to [7].

HIGHLIGHT DETAIL

You can adjust the level of contour added to brightly-lit objects. Choose a value from [0] to [4]. The higher the value, the greater the contour emphasis. Adjust this when you want to emphasize the contour of a brightly-lit object in a bright background.

SUPER LOW

Emphasizes contours in the super low range. Choose a value from [0] to [7]. The greater the value, the greater the contour emphasis. Contrast and resolution increase.

VISIBILITY ENHANCER (VIS. ENHANCER) Menu

```
VISIBILITY ENHANCER
-SETTING        OFF
```

SETTING

When this is turned [ON], gradation correction is adaptively performed according to the scene being shot.

EFFECT

You can adjust the brightness of the shadows on the screen. Choose a value from [−3] to [0] to [+3].

ZOOM/FOCUS Menu

The ZOOM/FOCUS menu is used to select the zoom/focus mode.

```
ZOOM/FOCUS
-ZOOM MODE
   CLEAR IMAGE ZOOM
 FOCUS MODE     AUTO
```

ZOOM MODE

Select the zoom mode.

[OPTICAL]: Zooms objects within the optical zoom range (up to 20x) of the camera.

[CLEAR IMAGE ZOOM] (Clear Image Zoom): An image is zoomed with less deterioration of image quality over the optical region. Zooming is up to 1.5× when the video output format is 4K, and up to 2× for other formats.

[DIGITAL]: An image can be zoomed up to 20× optical zoom and 12× digital zoom (including Clear Image Zoom) with up to a total of 240× zoom.

FOCUS MODE

Select the focus mode.

[AUTO]: The camera focuses automatically.

[MANUAL]: You can focus manually. Adjust using the supplied remote commander or optional remote controller.

Notes

Select [MANUAL] and adjust the focus manually when shooting the following objects.
- White walls and other objects without contrast
- Objects behind glass
- Objects with horizontal stripes
- Objects on which bright lights are cast or reflected
- Nightscapes and other dark objects with blinking lights
- Lit objects shot with darkened exposure adjustment or exposure compensation settings

PICTURE Menu

The PICTURE menu is used to adjust the picture quality improvement features.

```
PICTURE          1/2
  HIGH RESOLUTION
                   OFF
-NOISE REDUCTION
           ADVANCED
   2D NR LEVEL     3
   3D NR LEVEL     3
```

HIGH RESOLUTION

You can set [HIGH RESOLUTION] (High resolution mode) to [ON] or [OFF]. When set to [ON], you can enjoy emphasized edge and high-resolution images.

Notes

- When set to [ON], image noise may increase more than when set to [OFF].
- When [MODE] is set to [MANUAL] in [DETAIL], the function is not available.

NOISE REDUCTION

You can obtain clearer images by removing unnecessary noise (fixed pattern and randomized noise) with [NOISE REDUCTION]. Choose from [OFF] or level 1 through level 5. When you select [ADVANCED], you can set up [2D NR LEVEL] and [3D NR LEVEL] independently.

2D NR LEVEL

This is enabled when [NOISE REDUCTION] is [ADVANCED]. Choose from [OFF] or level [1] through level [5] for noise reduction.

3D NR LEVEL

This is enabled when [NOISE REDUCTION] is [ADVANCED]. Choose from [OFF] or level [1] through level [5] for noise reduction.

FLICKER CANCEL

When this is turned [ON], the flicker correction feature becomes enabled.
When this is turned [OFF], the flicker correction feature becomes disabled.

Note

Depending on conditions such as the type of illumination and shutter speed, the flicker correction feature may not be effective.
If the frame rate is close to the power supply frequency, the flicker correction feature may not be able to fully remove flickers, even if it is

enabled. If this happens, use the electronic shutter.
We recommend to set [FLICKER CANCEL] to [OFF] under lights where no flicker is generated, such as outdoors.

IMAGE STABILIZER

You can select this function according to the shooting conditions.
[OFF]: The image stabilization feature becomes disabled.
[ON]: The image stabilization feature becomes enabled.
When set to [ON], you can obtain steadier images if vibration is present.

Notes

- The image stabilizer function is not effective during pan/tilt operations. It may take some time for the image to stabilize after performing pan/tilt operations.
- If the image stabilizer function is already enabled, it may take some time for the image to stabilize after turning on the power of the camera.
- Depending on the installation conditions, the image stabilizer may not be effective.

OPTICAL FILTER Menu

The OPTICAL FILTER menu is used to set the optical filter.

```
OPTICAL FILTER
−IR CUT FILTER
                  AUTO
  ICR THRESHOLD    14
```

IR CUT FILTER

You can choose either to enable or disable the IR cut filter feature.
By disabling the IR cut filter feature, the gain in the IR region is increased allowing the camera to capture images in shadow.
[DAY]: IR cut filter feature is enabled to remove unnecessary IR.
[NIGHT]: IR cut filter feature is disabled. The picture becomes monochrome.
[AUTO]: The mode is automatically switched to [DAY] or [NIGHT].

Note

When this setting is set to [AUTO], set [EXPOSURE] - [MODE] to [FULL AUTO].

ICR THRESHOLD

When [IR CUT FILTER] is set to [AUTO], choose a level to switch from [NIGHT] to [DAY] in the range from 0 to 255.
The mode is subject to change from [NIGHT] to [DAY] the smaller the chosen value is.

Note

If the larger value is chosen, the mode may not be switched to the DAY mode even when the object is bright. In this case, choose the smaller value.

PAN TILT Menu

The PAN TILT menu is used to select the pan/tilt.

```
PAN TILT          1/2
-PAN LIMIT         ON
  LEFT          -170DEG
  RIGHT          170DEG
 TILT LIMIT        OFF
```

PAN LIMIT

Set whether to limit the pan rotation range.
[OFF]: Do not apply range limit.
[ON]: Apply range limit.

LEFT

–170 degrees to +169 degrees, adjustable in 1 degree increment.

RIGHT

–169 degrees to +170 degrees, adjustable in 1 degree increment.

TILT LIMIT

Set whether to limit the tilt rotation range.
[OFF]: Do not apply range limit.
[ON]: Apply range limit.

DOWN

–20 degrees to +89 degrees when [IMG FLIP] is set to [OFF], and –90 degrees to +19 degrees when [IMG FLIP] is set to [ON], adjustable in 1 degree increment.

UP

–19 degrees to +90 degrees when [IMG FLIP] is set to [OFF], and –89 degrees to +20 degrees when [IMG FLIP] is set to [ON], adjustable in 1 degree increment.

Setting range of LEFT/RIGHT

CENTER (±0°)

–170°   +170°
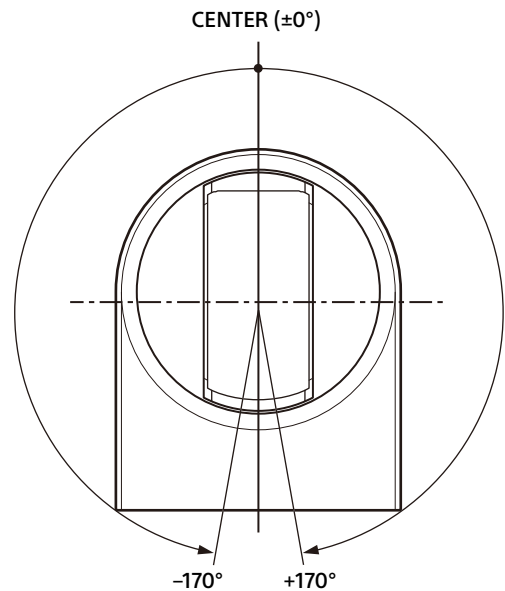
Setting range of DOWN/UP

+90°

±0°

–20°
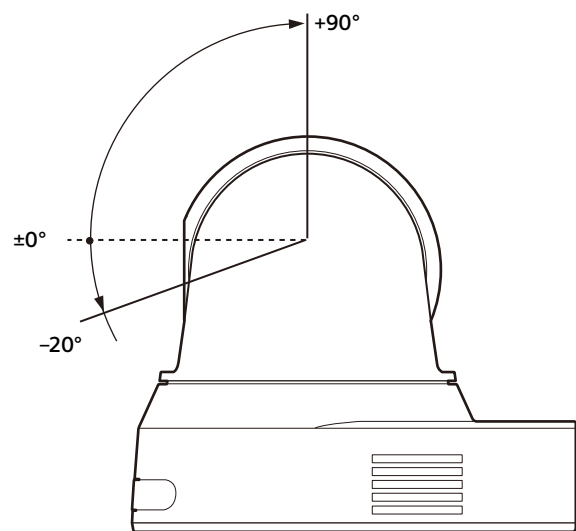
Notes

- Configure [PAN LIMIT] and [TILT LIMIT] before storing the camera position in a preset memory. If the camera position is out of the range of the [PAN LIMIT] and [TILT LIMIT] settings, you cannot store the camera position in the preset memory.
- When you change the [IMG FLIP] setting in the SYSTEM menu, the [PAN LIMIT] and [TILT LIMIT] settings are reset to the factory settings.

RAMP CURVE

Acceleration/deceleration curve for pan and tilt.

Note

This is fixed to [MODE1] for this camera.

PAN TILT SLOW

You can select slow speed panning/tilting.

[OFF]: The camera pans/tilts at the standard speed.

[ON]: The camera pans/tilt speed is slower.

PRESET RECALL Menu

The PRESET RECALL menu is used to select the preset recall settings.

```
PRESET RECALL
—RECALL SPEED
        COMPATIBLE
```

RECALL SPEED

You can select preset recall speed.

[COMPATIBLE]: Pan/tilt work with the speed set by each preset.

[SEPARATE]: Pan/tilt work with the speed set by each preset.

[COMMON]: Pan/tilt work with the common speed to all preset.

COMMON SPEED

This is enabled when [RECALL SPEED] is [COMMON]. Pan/tilt speed for preset recall, which is common to all preset.

VIDEO OUT Menu

```
VIDEO OUT
 HDMI
  -COLOR SPACE YCBCR
```

HDMI

COLOR SPACE

Set the color space of HDMI output.

SYSTEM Menu

```
SYSTEM          1/2
-IMG FLIP       OFF
 IR RECEIVE      ON
 STANDBY MODE
            NEUTRAL
 VIDEO FORMAT
   1920X1080/59.94P
```

IMG FLIP

When [IMG FLIP] is set to [ON], the picture is flipped vertically and picture shift direction by the pan/tilt operation is also reversed.
After the [IMG FLIP] setting is changed, the camera restarts automatically. Wait until the restart completes.

Note

When the [IMG FLIP] setting is changed, the coordinates for pan and tilt are flipped and the following are reset.
– Pan limit ([PAN LIMIT])
– Tilt limit ([TILT LIMIT])
– Preset

IR RECEIVE

If this is turned [OFF], the camera does not receive signals from the supplied remote commander.
Be sure to turn this [ON] when you use the supplied remote commander.

Note

You cannot set [IR RECEIVE] to [OFF] when using the supplied remote commander. Set [IR RECEIVE] to [OFF] using the remote controller (not supplied).

STANDBY MODE

This is the function to move the pan position to the end automatically when the camera enters in the standby mode.

[NEUTRAL]: The pan position is not moved automatically.

[SIDE]: The pan position is moved to the end automatically.

Notes

• When the mode is set to [SIDE], the pan position is moved to the end, exceeding the limit even if [PAN LIMIT] is specified.
• After the camera is turned on from the standby mode, the camera position moves to the position recorded on PRESET1.

VIDEO FORMAT

Select the video format of the signal to be output from the HDMI OUT and VIDEO OUT terminals. The video format can be changed from this menu when the SYSTEM SELECT switch is set to 6. When the SYSTEM SELECT switch is set to a value other than 6, the setting status of the SYSTEM SELECT switch is displayed.
After the setting is changed, turn off the camera and turn it on again, put the camera in the standby mode and turn it on again, or execute [REBOOT] to reflect the changes.
Select [2160/29.97p] (SRG-X40UH only), [2160/25p] (SRG-X40UH only), [1080/59.94p], [1080/50p], [1080/29.97p], [1080/25p], [1080/59.94i], [1080/50i], [720/59.94p], [720/50p], [480/59.94p] or [576/50p].

Note

The video format cannot be changed when the SYSTEM SELECT switch is set to a value other than 6.

NETWORK

Enable or disable the network connection.
[ON]: Network connection is available.
[OFF]: Network connection is not available.

CONTROL

Set the operating command protocol.
[USB]: USB (UVC) control
[VISCA]: VISCA control
[VOIP]: VISCA over IP control

Note

When a command protocol is selected, the other command protocols are not available.

VISCA RATE

Set the Baud Rate for RS-422 for VISCA control.
[9600]: 9600 bps
[38400]: 38400 bps

USB PRIVACY MODE

Set the panning for when Preview Off is set on the TV conference software on the computer connected via the USB cable.
[ON]: Moves the panning to the end position automatically.
[OFF]: Does not move the panning automatically.

REBOOT

Reboot the camera.

STATUS Menu

```
STATUS      PAGE1 1/4
  EXPOSURE
   MODE     FULL AUTO
    GAIN          9DB
    SPEED        1/60
    IRIS         F2.0
    AE SPEED        1
```

The STATUS menu is used to display the settings selected with the menus. This menu only displays the current menu settings, and you cannot change them with this menu.
The current menu settings will vary depending on the camera model. Press the ← or → button of the remote commander to switch PAGE.

PAGE1: Items in the EXPOSURE menu
PAGE2: Items in the COLOR menu
PAGE3: Items in the DETAIL menu
PAGE4: Items in the VISIBILITY ENHANCER menu
PAGE5: Items in the ZOOM/FOCUS menu
PAGE6: Items in the PICTURE menu
PAGE7: Items in the OPTICAL FILTER menu
PAGE8: Items in the PAN TILT menu
PAGE9: Items in the PRESET RECALL menu
PAGE10: Items in the VIDEO OUT menu
PAGE11: Items in the SYSTEM menu
PAGE12: Device information of the camera and status of switch settings on the back of the camera
PAGE13: Network settings

DEVICE INFO (Device information of the camera and setting status of switches on the back of the camera)

Displays the device information.

MODEL NAME

Displays the model name of the camera.

SERIAL NUMBER

Displays the serial number of the camera.

VERSION

Displays the software version of the camera.

NAME

Displays the name applied to the camera. Change this using the RM IP Setup Tool.

SYSTEM MODE

Displays the video output format of the camera.

IR SELECT

Displays the number of the IR SELECT switch on the back of the camera.

NETWORK

Displays the network connection status.

CONTROL

The command protocol.

VISCA RATE

The Baud Rate for RS-422 for VISCA control.

NETWORK

The NETWORK menu is used to configure Network settings.

MAC ADDRESS

Displays the MAC address of the camera.

IP ADDRESS

Displays the IP address set up on the camera.

SUBNET MASK

Displays the subnet mask currently set up for the camera.

GATEWAY

Displays the default gateway address currently set up for the camera.

Notes

- To enable the Network features, set [NETWORK] to ON on the SYSTEM menu.
- You should set up the IP address, subnet mask, and default gateway before you first use the Network features. Configure these settings using the setup application "RM-IP Setup Tool" on your computer.
  For details on the settings, refer to the "RM-IP Setup Tool Guide."
- After when the Network features are enabled or when the Network features are enabled after approximately twenty minutes pass after the unit is turned on, the settings using "RM-IP Setup Tool" do not change automatically.
- After changing a setting on a menu, wait at least 2 minutes before powering off the camera. If you power off the camera

immediately, the changed setting may not be stored correctly.

Menu Configuration

The camera menu is configured as described below. For more details, refer to the pages in parentheses. The initial settings of each item are in bold. Only supported functions are displayed.

EXPOSURE (page 28)

- MODE — **FULL AUTO**, MANUAL, SHUTTER Pri, IRIS Pri
- GAIN — **0dB**, 3dB, 6dB, 9dB, 12dB, 15dB, 18dB, 21dB, 24dB, 27dB, 30dB, 33dB, 36dB (When high-sensitivity mode is set to OFF)
  0dB, 3dB, 6dB, 9dB, 12dB, 15dB, 18dB, 21dB, 24dB, 27dB, 30dB, 33dB, 36dB, 39dB, 42dB, 45dB, 48dB (When high-sensitivity mode is set to ON) (Adjustable only when MODE in the EXPOSURE menu is set to MANUAL.)
- SPEED — For the 59.94 or 29.97 frame rate of video output: 1/1, 2/3, 1/2, 1/3, 1/4, 1/6, 1/8, 1/10, 1/15, 1/20, 1/30, 1/50, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000
  For the 50 or 25 frame rate of video output: 1/1, 2/3, 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/15, 1/20, 1/25, 1/30, 1/50, 1/60, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
- IRIS — **F2.0**/F2.2/F2.4/F2.6/F2.8/F3.1/F3.4/F3.7/F4.0/F4.4/F4.8/F5.2/F5.6/ F6.2/F6.8/F7.3/F8.0/F8.7/F9.6/F10/F11/CLOSE (Adjustable only when MODE in the EXPOSURE menu is set to MANUAL or IRIS Pri.)
- AE SPEED — **1** ~ 48 (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO, SHUTTER Pri, or IRIS Pri.)
- EX-COMP — **OFF**, ON (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO, SHUTTER Pri, or IRIS Pri.)
- LEVEL — -7, -6, -5, -4, -3, -2, -1, **0**, +1, +2, +3, +4, +5, +6, +7
  (Adjustable when MODE in the EXPOSURE menu is set to FULL AUTO, SHUTTER Pri, or IRIS Pri, and EX COMP is set to ON.)
- GAIN LIMIT — 9dB, 12dB, 15dB, 18dB, 21dB, 24dB, 27dB, 30dB, 33dB, **36dB** (When high-sensitivity mode is set to OFF)
  21dB, 24dB, 27dB, 30dB, 33dB, 36dB, 39dB, 42dB, 45dB, **48dB** (When high-sensitivity mode is set to ON)
  (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO, SHUTTER Pri, or IRIS Pri.)
- GAIN POINT — **OFF**, ON (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO or IRIS Pri.)
- POSITION — **0dB**, 3dB, 6dB, 9dB, 12dB, 15dB, 18dB, 21dB, 24dB, 27dB, 30dB, 33dB, 36dB (When high-sensitivity mode is set to OFF)
  0dB, 3dB, 6dB, 9dB, 12dB, 15dB, 18dB, 21dB, 24dB, 27dB, 30dB, 33dB, 36dB, 39dB, 42dB, 45dB, 48dB (When high-sensitivity mode is set to ON)
  (Adjustable when MODE in the EXPOSURE menu is set to FULL AUTO or IRIS Pri, and GAIN POINT is set to ON.)
- MAX SPEED — For the 59.94 or 29.97 frame rate of video output: 1/30, 1/50, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000
  For the 50 or 25 frame rate of video output: 1/25, 1/30, 1/50, 1/60, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
- MIN SPEED — For the 59.94 or 29.97 frame rate of video output: 1/1, 2/3, 1/2, 1/3, 1/4, 1/6, 1/8, 1/10, 1/15, 1/20, 1/30, 1/50, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000
  For the 50 or 25 frame rate of video output: 1/1, 2/3, 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/15, 1/20, 1/25, 1/30, 1/50, 1/60, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000

BACKLIGHT ——————— **OFF**, ON (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO, SHUTTER Pri, or IRIS Pri.)

SPOTLIGHT ——————— **OFF**, ON (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO, SHUTTER Pri, or IRIS Pri.)

SLOW SHUTTER —————— **OFF**, ON (Adjustable only when MODE in the EXPOSURE menu is set to FULL AUTO or IRIS Pri.)

COLOR —————— WHITE BALANCE
(page 30)   MODE ——————— **AUTO1**, AUTO2, INDOOR, OUTDOOR, ONE PUSH, MANUAL
                 SPEED ——————— 1, 2, **3**, 4, 5 (Adjustable only when WHITE BALANCE MODE is set to AUTO1 or AUTO2.)
                 OFFSET ——————— –7, –6, –5, –4, –3, –2, –1, **0**, +1, +2, +3, +4, +5, +6, +7 (Adjustable only when WHITE BALANCE MODE is set to AUTO1, AUTO2, or ONE PUSH.)
                 R.GAIN ——————— –128~**0**~+127 (Adjustable only when WHITE BALANCE MODE is set to MANUAL.)
                 B.GAIN ——————— –128~**0**~+127 (Adjustable only when WHITE BALANCE MODE is set to MANUAL.)

DETAIL——————— MODE ——————— **AUTO**, MANUAL
(page 31)   LEVEL——————— –7, –6, –5, –4, –3, –2, –1, **0**, +1, +2, +3, +4, +5, +6, +7, +8
                 BAND WIDTH —————— **DEFAULT**, LOW, MIDDLE, HIGH, WIDE (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)
                 CRISPENING ——————— 0, 1, 2, **3**, 4, 5, 6, 7 (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)
                 HV BALANCE——————— –2, –1, **0**, +1, +2 (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)
                 BW BALANCE ——————— TYPE0, TYPE1, **TYPE2**, TYPE3, TYPE4 (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)
                 LIMIT ——————— 0, 1, 2, **3**, 4, 5, 6, 7 (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)
                 HIGHLIGHT DETAIL– **0**, 1, 2, 3, 4 (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)
                 SUPER LOW——————— 0, 1, 2, **3**, 4, 5, 6, 7 (Adjustable only when MODE in the DETAIL menu is set to MANUAL.)

VISIBILITY ——— SETTING ——————— **OFF**, ON
ENHANCER   EFFECT——————— –3, –2, –1, **0**, +1, +2, +3
(page 32)

ZOOM/FOCUS— ZOOM MODE ——————— OPTICAL, **CLEAR IMAGE ZOOM**, DIGITAL
(page 33)   FOCUS MODE ——————— **AUTO**, MANUAL

PICTURE ——————— HIGH RESOLUTION - **OFF**, ON
(page 33)   NOISE REDUCTION - OFF, 1, 2, **3**, 4, 5, ADVANCED
                 2D NR LEVEL ——————— OFF, 1, 2, **3**, 4, 5 (Adjustable only when NOISE REDUCTION is set to ADVANCED.)
                 3D NR LEVEL ——————— OFF, 1, 2, **3**, 4, 5 (Adjustable only when NOISE REDUCTION is set to ADVANCED.)
                 FLICKER CANCEL —— **OFF**, ON
                 IMAGE STABILIZER– **OFF**, ON

OPTICAL ——————— IR CUT FILTER ——————— **DAY**, NIGHT, AUTO
FILTER   ICR THRESHOLD —— 0 ～**14**～255 (Adjustable only when IR CUT FILTER is set to AUTO.)
(page 34)

PAN TILT ———— PAN LIMIT ———————— **OFF**, ON
(page 35)   ├─ LEFT ———————————— **-170°**~+169° (Adjustable only when PAN LIMIT is set to ON.)
              ├─ RIGHT ——————————— -169°~**+170°** (Adjustable only when PAN LIMIT is set to ON.)
              ├─ TILT LIMIT ————————— **OFF**, ON
              ├─ DOWN ———————————— when IMG FLIP is OFF: **-20°**~+89°
              │   when IMF FLIP is ON: **-90°**~+19°
              │   (Adjustable only when TILT LIMIT is set to ON)
              ├─ UP ——————————————— when IMG FLIP is OFF: -19°~**+90°**
              │   when IMF FLIP is ON: -89°~**+20°**
              │   (Adjustable only when TILT LIMIT is set to ON)
              ├─ RAMP CURVE ————————— **MODE1**
              └─ PAN TILT SLOW ————— **OFF**, ON

PRESET ————— RECALL SPEED ———————— **COMPATIBLE**, SEPARATE, COMMON
RECALL   └─ COMMON SPEED ————— 1~**25** (Adjustable only when RECALL SPEED is set to COMMON.)
(page 36)

VIDEO OUT ┐ HDMI
(page 37) └ COLOR SPACE ————————— **YCbCr**, RGB

SYSTEM ——————————— IMG FLIP ——————————— ON, **OFF**
(page 37)   ├─ IR RECEIVE ————————— **ON**, OFF
                   ├─ STANDBY MODE ————————— **NEUTRAL**, SIDE
                   ├─ VIDEO FORMAT ————————— 3840x2160/29.97p, 3840x2160/25p, 1920x1080/59.94p,
                   │   1920x1080/50p, 1920x1080/29.97p, 1920x1080/25p,
                   │   1920x1080/59.94i, 1920x1080/50i, 1280x720/59.94p,
                   │   1280x720/50p, 720x480/59.94p,
                   │   720x576/50p (SRG-X40UH)
                   │
                   │   1920x1080/59.94p, 1920x1080/50p, 1920x1080/29.97p,
                   │   1920x1080/25p, 1920x1080/59.94i, 1920x1080/50i,
                   │   1280x720/59.94p, 1280x720/50p, 720x480/59.94p,
                   │   720x576/50p (SRG-H40UH)
                   ├─ NETWORK ——————————— ON, **OFF**
                   ├─ CONTROL ———————————— **USB**, VISCA, VOIP
                   ├─ VISCA RATE ————————— **9600**, 38400
                   ├─ USB PRIVACY MODE —— **OFF**, ON
                   └─ REBOOT ——————————— **NOT EXEC**, EXEC

STATUS——————— EXPOSURE
(page 38)   ├─ COLOR
              ├─ DETAIL
              ├─ VISIBILITY ENHANCER
              ├─ ZOOM/FOCUS
              ├─ PICTURE
              ├─ OPTICAL FILTER
              ├─ PAN TILT
              ├─ PRESET RECALL
              ├─ VIDEO OUT
              ├─ SYSTEM
              ├─ DEVICE INFO
              └─ NETWORK

You can access the camera from a web browser on a computer to upgrade the firmware.
An IP address must be set on the camera for access from a web browser. For details on IP address settings, refer to "RM-IP Setup Tool Guide."

Enabling the Network Connection on the Camera

The network connection on the camera must be enabled to access the camera from a web browser. To enable/disable the network connection, use the OSD menu (SYSTEM – NETWORK).

Note

After the SYSTEM - NETWORK setting is changed in the OSD menu, restart the camera.

Setting-up the Computer

System configurations required for the Computer are shown in the following (as of July 2022).

OS/Web browser

Windows
    OS version
        Windows 11 (64-bit version)
        Windows 10 (64-bit version)
    Web browser
        Google Chrome (Recommended)
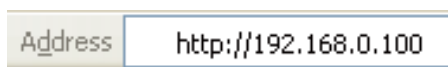   Microsoft Edge
macOS
    OS version
        macOS 10.15
    Web browser
        Google Chrome (Recommended)

Accessing the Camera from a Web Browser

Start a web browser on the computer and enter the IP address of the camera in the address bar.

Address   http://192.168.0.100

Authentication by user ID and password is required to access the camera.

Changing the Initial Password

Accessing the camera from a web browser for the first time requires to change the administrator password. The default administrator name and password are as follows.
Administrator name: admin
Password: Admin_1234

The password should be between 8 and 32 alphanumeric characters. The password must contain alphanumeric characters.

Note

When changing the password, use the network configuration that an unintended third party cannot access.

Configuring the Camera from a Web Browser

This section explains how to set the functions of the camera by an administrator.

Notes for all aspects of the menu

After changing a setting on a menu, wait at least 2 minutes before powering off the camera. If you power off the camera immediately, the changed setting may not be stored correctly.

Configuration of the Administrator Menu

Firmware Update Menu

The camera information is displayed.
You can also use this menu to update the camera's firmware.

Information

Model name
Displays the model name of the camera.

Camera name
Displays the name applied to the camera. Change this using the RM IP Setup Tool.

Software version
Displays the software version of the camera.

Firmware update

Use this to upgrade the firmware. Click [Browse] to select the firmware file for performing the desired version update. When you click [Send], the confirmation dialog appears. Follow the instructions to run the update.

Password Menu

You can set the administrator password.

Current Password

Enter the current set password.

New Password

Enter a password between 8 and 32 alphanumeric characters. Set a password that includes both alphabet letters and numbers.

Re-type new Password

Enter the same characters you entered for the [New Password] field for password confirmation.

OK

Click to change the password. Until you click this button, the change is not applied on the camera.

Cancel

Click to return to the original password and invalidate the password change.

Note

When changing the password, use the network configuration that an unintended third party cannot access.

Message List

The following messages and indications may appear on this camera. Perform the following as necessary.

Camera Lamp Display

Lamp status	Description and solution
STANDBY lamp (orange) is flashing.	An error has occurred in the camera. Details of the error are displayed in the main menu. Check the details of the error before solving the problem.

Camera Screen Display (OSD Menu)

Message	Description and solution
PAN-TILT ERROR!	The movement of the camera has stopped due to an error in the pan-tilt driving unit. Reset the pan/tilt position. Or, turn off and on the camera.
MEMORY FAULT!	The memory of the camera has been damaged. Turn off the camera and contact the Sony Service Center or your licensed Sony dealer.

Troubleshooting

Before sending your camera for service, check the following to troubleshoot the problem. If the problem still persists, consult the Sony Service Center.

Symptom	Cause	Remedy
The power of the camera is not turned on.	The AC adapter is not firmly connected to the DC IN 12 V terminal.	Firmly insert the AC adapter all the way.
	The power cord is not firmly connected to the AC adapter or the power supply.	Firmly insert the power cord all the way.
	The connection cable to the PoE+ power supply device is not firmly connected.	Firmly insert the connection cable all the way.
	A non-PoE+ compliant-power supply device is connected.	Connect a PoE+ compliant-power supply device.
The camera does not work, even when buttons on the remote commander are pressed.	[IR RECEIVE] on the SYSTEM menu is turned [OFF].	Set [IR RECEIVE] to [ON] by operating the menu with the remote controller RM-IP500/IP10 (page 37).
	The remote commander's CAMERA SELECT button number and the camera's IR SELECT switch setting are different.	Press the CAMERA SELECT button that matches the IR SELECT switch setting (page 8).
An image is not displayed on the connected video monitor.	The video connecting cable is not connected properly.	Check the connection between the camera and video monitor.
	Exposure settings on the camera are not appropriate.	Check the exposure settings in the EXPOSURE menu.
Pan, tilt, or zoom cannot be operated.	The camera OSD menu is displayed.	Close the menu by pressing the DATA SCREEN button on the supplied remote commander. Or close the menu with the remote controller.
The camera cannot be operated with the remote controller RM-IP500/IP10.	The connection method is not configured properly.	Configuration of the connection method (VISCA RS-422 or VISCA over IP) for RM-IP500/IP10 is required. Check whether the connection method for RM-IP500/IP10 corresponds to the connected cable.
	The VISCA RS-422 connection is incorrect.	Check the connection to the VISCA RS-422 terminal and the wiring of the RS-422 cable.
	Communication baud rate settings are different.	Set the same settings for the baud rate (9600 bps or 38400 bps) on the remote controller and SYSTEM - VISCA RATE on the OSD menu.
	The VISCA over IP connection is incorrect.	Check the connection to the LAN terminal. Use a cross network cable when connected to the remote controller on a one-to-one basis.
VISCA is not available even when the camera is connected to a computer.	The computer is not correctly connected to the camera.	Check the connection between the camera and computer.
		Make sure the baud rate (9600 bps or 38400 bps) is set correctly for SYSTEM - VISCA RATE on the OSD menu and that it is set in the computer settings.
		Connect the camera to the remote controller RM-IP500/IP10 to check whether the camera is not damaged.
Cannot access the camera using a web browser.	The network function is set to [OFF].	Select [ON] for SYSTEM - NETWORK on the OSD menu.
Problems are not resolved although measures were taken.	—	Remove the plug of the power cord from the AC outlet, then reinsert it into the AC outlet after waiting a while.

Symptom	Cause	Remedy
The image is not displayed on the computer screen that is connected.	The USB cable is not connected properly. An authenticated USB cable is not being used.	Check that the unit and the computer are connected. Use an authenticated USB cable.
	—	Disconnect the USB cable from the computer, then reconnect it again.
	A video format that cannot be output via USB is selected.	Select the proper video format.

Items Stored in the Preset

Items stored in the preset are shown in the following lists.

Item stored in the preset
●: Stores settings by preset.
○: Applies the settings to the camera at the next start-up when they are stored in Preset 1. Preset recall does not apply the settings.

Pan/Tilt/Zoom/Focus Settings

Item name on the OSD menu	Items other than the OSD/ Administrator menu	Item stored in the preset
-	Pan-Tilt position	●
RAMP CURVE	-	●
ZOOM MODE	-	●
-	Zoom position	●
FOCUS MODE	-	●
-	Focus position	●
-	Auto focus mode	●
-	Auto focus interval	●
-	Auto focus sensitivity	●

Camera Settings

Item name on the OSD menu	Items other than the OSD/ Administrator menu	Item stored in the preset
EXPOSURE MODE	-	●
IRIS	-	●
GAIN	-	●
GAIN LIMIT	-	●
GAIN POINT	-	●
POSITION	-	●
-	High-sensitivity Mode	●
SPEED	-	●
MAX SPEED	-	●
MIN SPEED	-	●
SLOW SHUTTER On/Off	-	●
EX-COMP On/Off	-	●
EX-COMP LEVEL	-	●

Item name on the OSD menu	Items other than the OSD/ Administrator menu	Item stored in the preset
BACKLIGHT	-	●
SPOTLIGHT	-	●
AE SPEED	-	●
-	AE Ref. Low-light Modulation On/Off	●
-	AE Ref. Low-light Modulation Level	●
VISIBILITY ENHANCER On/Off	-	●
VISIBILITY ENHANCER EFFECT	-	●
WHITE BALANCE MODE	-	●
WHITE BALANCE MODE SPEED	-	●
WHITE BALANCE MODE OFFSET	-	●
WHITE BALANCE MANUAL R-GAIN	-	●
WHITE BALANCE MANUAL B-GAIN	-	●
-	R-Gain of OnePushWB	●
-	B-Gain of OnePushWB	●
DETAIL MODE	-	●
DETAIL LEVEL	-	●
DETAIL BAND WIDTH	-	●
DETAIL CRISPENING	-	●
DETAIL HV BALANCE	-	●
DETAIL BW BALANCE	-	●
DETAIL LIMIT	-	●
HIGHLIGHT DETAIL	-	●
DETAIL SUPER LOW	-	●
-	Low Illumination Color NR	●
FLICKER CANCEL On/Off	-	●
HIGH RESOLUTION	-	●
IMAGE STABILIZER	-	●
NOISE REDUCTION	-	●
2D NR LEVEL	-	●
3D NR LEVEL	-	●
-	Picture Effect	●
IR CUT FILTER	-	●
ICR THRESHOLD	-	●
IR RECEIVE	-	○

Specifications

System

Video signal   3840 × 2160/29.97p *
1920 × 1080/59.94p
1920 × 1080/59.94i *
1920 × 1080/29.97p
1280 × 720/59.94p
3840 × 2160/25p
1920 × 1080/50p
1920 × 1080/50i *
1920 × 1080/25p
1280 × 720/50p
* Not compatible with the USB output.
Details of each model (page 52)

Synchronization
Internal synchronization

Image device   1/2.5-type, CMOS image sensor
Effective pixel number: Approx. 8.5 Megapixels

Camera

Lens   Optical, 20 ×
f = 4.4 mm to 88.0 mm, F2.0 to F3.8
f = 26.8 mm to 536.0 mm (35 mm camera conversion)

Minimum object distance
80 mm (WIDE), 800 mm (Tele)

Minimum illumination
1.6 lux 4K/HD output, 50IRE, F2.0, 1/30s, High-sensitivity Mode: OFF
Max.Gain (WIDE end)

Shutter speed
1/10000s to 1/1s

Pan/Tilt function
Horizontal ±170 degrees
Maximum speed: 101 degrees/second
Minimum speed: 0.5 degrees/second
Maximum speed (when the preset is recalled): 300 degrees/second
Minimum speed (when the preset is recalled): 1.1 degrees/second
Vertical +90 degrees, −20 degrees
Maximum speed: 91 degrees/second
Minimum speed: 0.5 degrees/second
Maximum speed (when the preset is recalled): 126 degrees/second
Minimum speed (when the preset is recalled): 1.1 degrees/second

Output terminals

HDMI OUT   Terminal: HDMI connector (Type A) × 1
Standards: HDMI
Color space: YCbCr, 4:2:2 12bit RGB, 4:4:4 8bit

VIDEO OUT   Terminal: USB Type-C × 1
Standards: USB2.0 compatible

Input and Output terminals

VISCA RS-422   Terminal: RJ45 × 2
Standards: VISCA

LAN terminal   Terminal: RJ45
Standards: IEEE802.3at compatible (PoE+)

Input terminals

Power terminal
IEC60130-10 (JEITA standard RC-5320A) TYPE 4

General

Input voltage   DC 12 V (AC adapter 100 to 240 V, 50/60 Hz), PoE+ (IEEE802.3at compatible)

Power consumption
For DC 12 V: 23.8 W
For PoE+: 25.5 W

Operating temperature
0° C to 40° C (32° F to 104° F)

Storage temperature
−20°C to +60°C (−4°F to +140°F)

External dimensions (Dimensions page 51)
158.4 × 177.5 × 200.2 mm (6 $^1/_4$ × 7 × 8 inches) (width/height/depth) (without protrusions)

Mass   Approx. 1.6 kg (3 lb 8.43 oz)

Installation angle
Less than ±15 degrees to the horizontal surface

Supplied Accessories

Safety Regulations (1)
AC adapter (1)
Remote commander (1)
Ceiling bracket (A) (1)
Ceiling bracket (B) (1)
Wire rope (1)

Mounting screws (⊕M3×8) (9)
Mounting screws (⊕M2.6×6 black) (1)
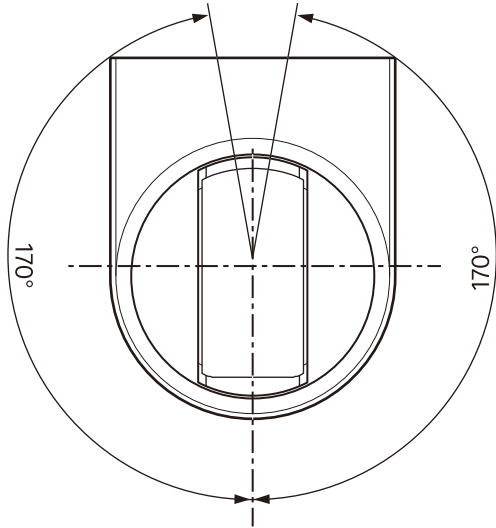HDMI cable fixing plate (1)

Optional accessories
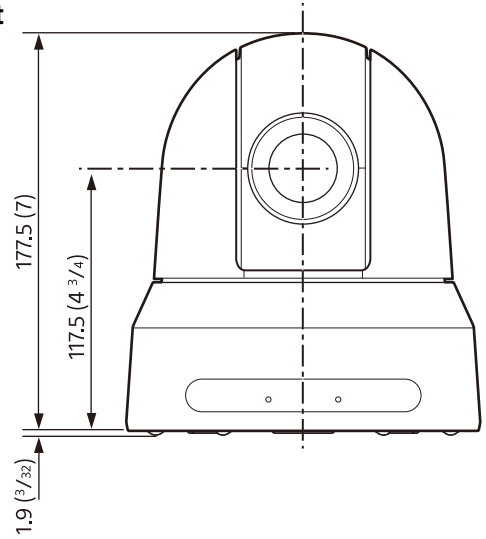
Remote controller (RM-IP500/IP10)

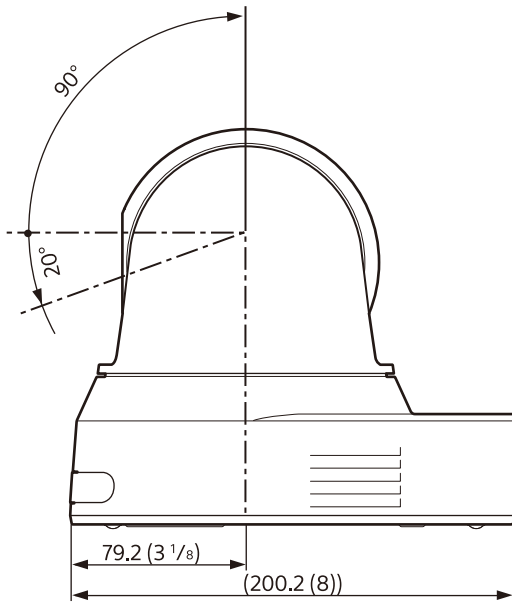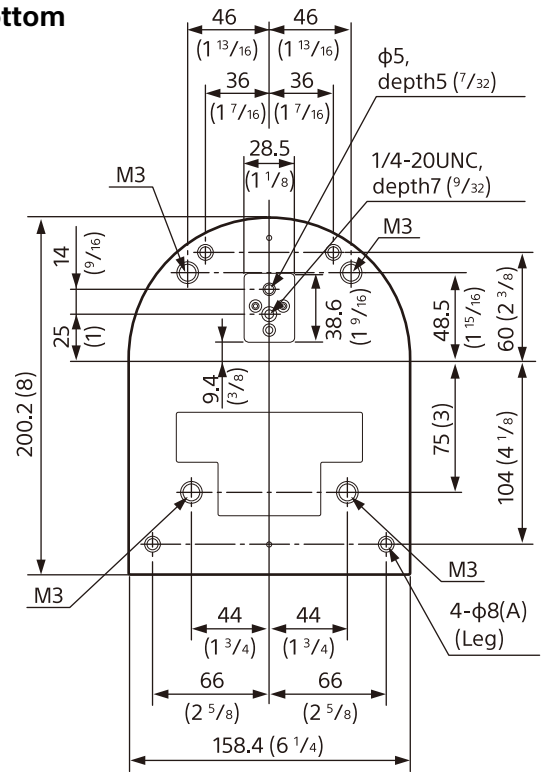Design and specifications are subject to change without notice.

Dimensions
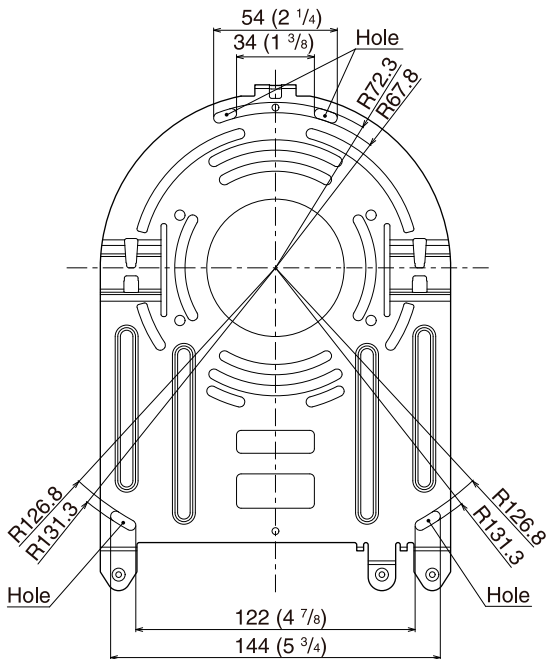
Top

Front

Side
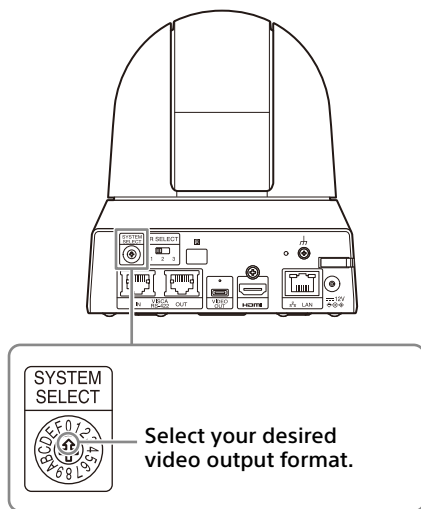

Bottom

Ceiling bracket (B)

Unit: mm (inches)

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SYSTEM SELECT switch settings

Video output format for the HDMI OUT/VIDEO OUT terminal can be set with this switch.

SYSTEM SELECT

Select your desired video output format.

No.	Video output format/Frame rate			
	SRG-X40UH		SRG-H40UH	
	HDMI output	USB output	HDMI output	USB output
0	3840x2160/ 29.97p	Not compatible	1920x1080/59.94p	
1	1920x1080/59.94p		1920x1080/59.94p	
2	1920x1080/ 59.94i	Not compatible	1920x1080/ 59.94i	Not compatible
3	1920x1080/29.97p		1920x1080/29.97p	
4	1280x720/59.94p		1280x720/59.94p	
5	EDID	*1	EDID	*1
6	REMOTE		REMOTE	
7	720x480/ 59.94p	Not compatible	720x480/ 59.94p	Not compatible
8	3840x2160/ 25p	Not compatible	1920x1080/59.94p	
9	1920x1080/50p		1920x1080/50p	
A	1920x1080/ 50i	Not compatible	1920x1080/ 50i	Not compatible
B	1920x1080/25p		1920x1080/25p	
C	1280x720/50p		1280x720/50p	
D	Reserved		Reserved	
E	Reserved		Reserved	
F	Reserved		Reserved	

*1 Outputs in the resolution after the EDID is set on the HDMI monitor.
The video signal does not output via USB output when 4K and the interlace output are set.

Notes

• Be sure to set the switch before you turn on the camera.
Turn on the power after you set the switch.

• Be sure to use a Phillips-head screwdriver when changing the switch position. If you use a tool other than the designated screwdriver, the crossed groove may be damaged.

Pin array of the VISCA RS-422 terminal and how to use it
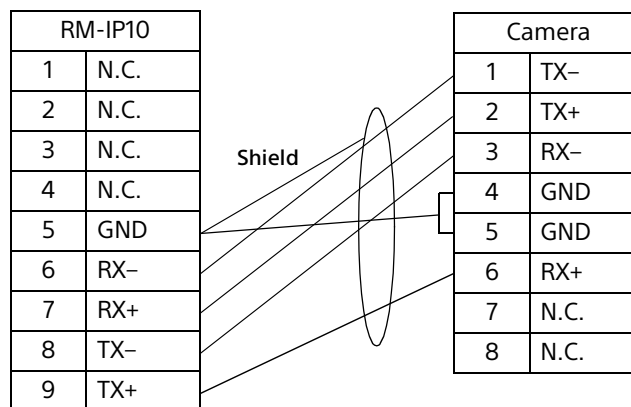
Pin array of VISCA RS-422 terminal

IN

Pin No.	Function
1	TX–
2	TX+
3	RX–
4	GND
5	GND
6	RX+
7	N.C.
8	N.C.

OUT

Pin No.	Function
1	RX–
2	RX+
3	TX–
4	GND
5	GND
6	TX+
7	N.C.
8	N.C.

Connection diagram with remote controller RM-IP10

RM-IP10	
1	N.C.
2	N.C.
3	N.C.
4	N.C.
5	GND
6	RX–
7	RX+
8	TX–
9	TX+

Camera	
1	TX–
2	TX+
3	RX–
4	GND
5	GND
6	RX+
7	N.C.
8	N.C.

Shield

Notes

• Connect the GNDs of both devices together to stabilize the voltage level of the signal.
• When preparing cables, use network cables of category 5e or more and equivalent to or higher than shielded twisted pair cables.

Sony Corporation